Draft

Public Participation Plan Update

Volunteer Army Ammunition Plant
Chattanooga, Tennessee

Prepared for

US Army Corps of Engineers
Mobile District

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Knoxville, Tennessee

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1.0 Introduction

This **public participation plan**[1] describes the public participation program that has been developed by the Army in support of the environmental program at Volunteer Army Ammunition Plant (VAAP) in Chattanooga, Tennessee. Developed in conjunction with the **U.S. Environmental Protection Agency (EPA)** Region IV in Atlanta, Georgia, and the **Tennessee Department of Environment and Conservation (TDEC)** Division of Superfund, this public participation plan updates the previous public involvement and response plan, dated January 1989.

VAAP is an inactive, excess status, **government-owned, contractor-operated** defense manufacturing facility located in Chattanooga (Hamilton County), Tennessee. Figure 1-1 shows where VAAP is located. The facility is managed by the major command, U.S. Army Materiel Command in Alexandria, Virginia, the subcommand, **U.S. Army Operational Support Command (OSC)** located in Rock Island, Illinois, and the installation command, Volunteer Army Ammunition Plant Installation Management Division. The Army, through oversight by the U.S. Army Corps of Engineers, Mobile District, and other Army agencies, is cleaning up contaminated **groundwater** and soil at the VAAP site.

1.1 Purpose

The purpose of this public participation plan is to convey the Army's community involvement effort at VAAP and describe public participation activities that will be performed in conjunction with the environmental cleanup activities that are being conducted under the Army **Installation Restoration Program (IRP)**. This plan describes the methods the Army will use to keep the community informed of progress in the environmental restoration program at the VAAP site and allow for two-way communication between the Army and the public.

1.2 Basis for the Public Participation Program

The public participation plan is based on interviews conducted in March and April 2002 with local officials, residents, and members of community and other interested groups.

Information also was obtained from VAAP public participation files, news media reports, and input from VAAP and subcontractor staff who are knowledgeable about VAAP and the surrounding community.

Community involvement activities outlined in this public participation plan were developed as a result of the concerns and information needs identified during those discussions. If, however, the

[1] *See Appendix A for a list of acronyms and abbreviations used in this document. See Appendix B for a glossary that defines technical terms that appear in **boldface** in the text.*

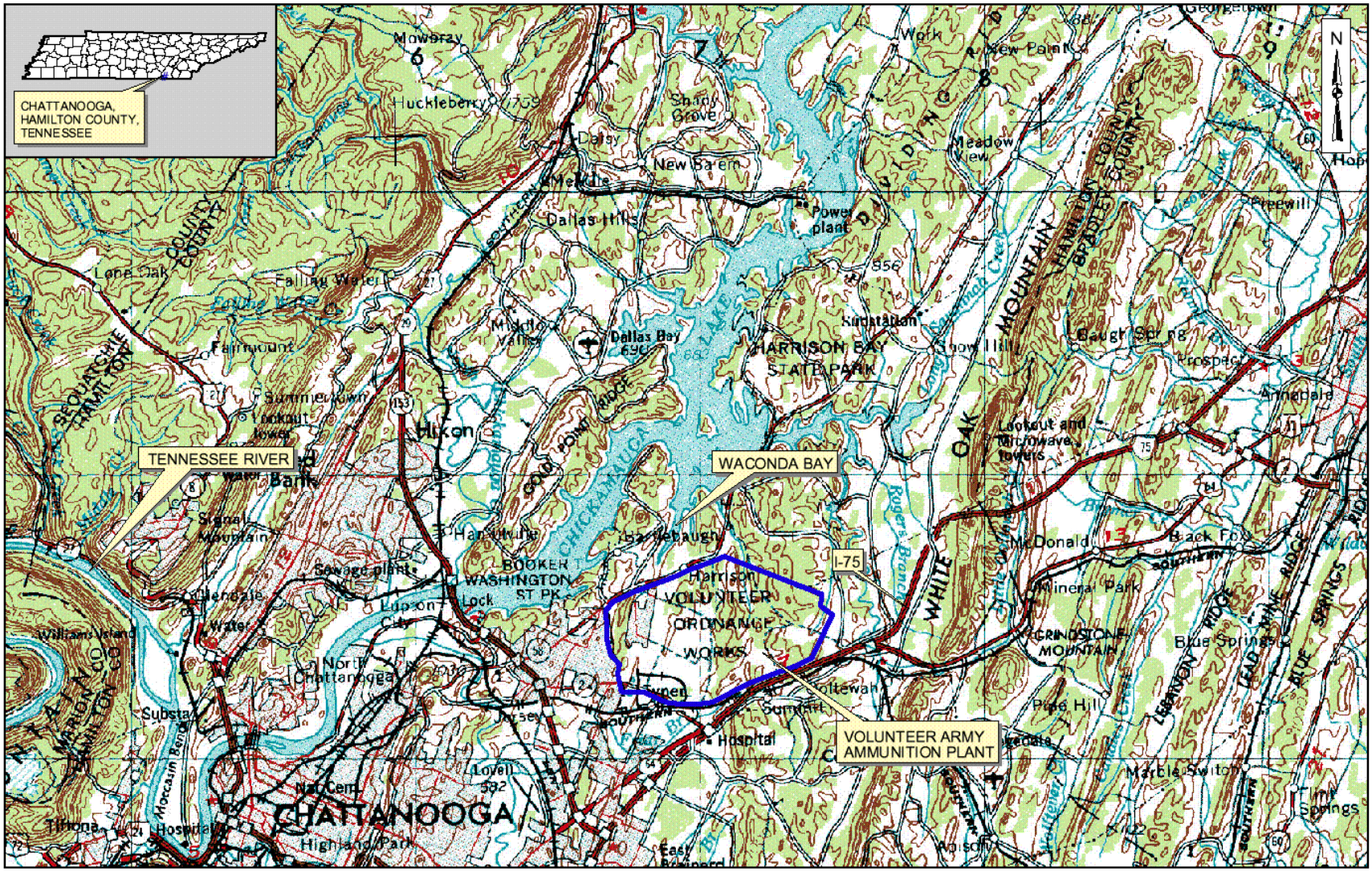

Figure 1-1. Volunteer Army Ammunition Plant Location Map

community's concerns or information needs change during the course of the cleanup, the Army can modify the public participation program to reflect those changes.

1.3 Objectives of the Public Participation Plan

The public participation program for the VAAP site seeks to provide ways for the public to participate in the decision-making process related to the environmental cleanup. At key points during the cleanup process, the Army has provided and will continue to provide opportunities for the community to voice opinions or concerns about the proposed **remedial** (cleanup) alternatives. The community's viewpoints will be taken into consideration before any final decisions about remedial activities or actions are made.

The overall objectives of the Army's community involvement are to:

- Ensure two-way communication between the community and the Army
- Inform the community of technical progress at IRP cleanup sites
- Involve the community in the decision-making process
- Provide copies of project-related documents at the information repository at VAAP and the local public library. (See Appendix C for the location of the repository).

1.4 Organization of the Plan

The public participation plan contains the following sections:

- Section 1.0 provides an overview of the plan, the objectives of the public participation program, and the regulatory process guiding the plan.

- Section 2.0 outlines the regulations that govern the cleanup of the VAAP IRP sites.

- Section 3.0 provides a brief description of the VAAP facility's location and history, cleanup site conditions, and the activities that have been conducted to date.

- Section 4.0 presents a community profile and a history of the community's involvement in site activities. It also explains the community interview process and describes community concerns about the VAAP site expressed during community interviews.

- Section 5.0 sets forth public participation activities designed to meet the public participation program objectives identified in response to community concerns. This section also provides a schedule of the upcoming technical (cleanup) activities at the VAAP site and the corresponding community involvement activities the Army will conduct at each milestone in the remediation program.

- Section 6.0 lists references used in the development of this plan.

- The public participation plan also includes the following appendices:

Appendix A	List of Acronyms and Abbreviations
Appendix B	Glossary
Appendix C	Location of the Administrative Record File and Information Repository
Appendix D	Site Summaries for Volunteer Army Ammunition Plant
Appendix E	Cross Reference for Site Names and Designations
Appendix F	List of Key Contacts
Appendix G	Interview Questionnaire and Responses
Appendix H	Suggested Public Meeting Locations

1.5 Agencies with Oversight Responsibilities

The Army is responsible for conducting the IRP at VAAP. The EPA and TDEC are responsible for overseeing the environmental cleanup program at VAAP.

The Army, the EPA, and TDEC have designated contacts who are responsible for ensuring public participation in the environmental program at VAAP. The person responsible for the implementation of this public participation plan is:

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The lead technical project staff and regulatory contacts are:

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Mr. Edward Engbert
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Or
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2.0 Overview of Governing Regulations

In 1980, the U.S. Congress passed the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** (42 U.S.C. 9604 *et seq*.) to address the cleanup of former hazardous waste disposal sites across the country. CERCLA gives the President of the United States the authority to require responsible parties to clean up sites or undertake response actions through the use of a fund, known as Superfund. In 1981, the Secretary of Defense established the IRP to investigate Department of Defense sites. In turn, each military service established its own IRP to locate, investigate, and clean up hazardous waste sites on its installations.

Congress amended CERCLA in 1986 through the **Superfund Amendments and Reauthorization Act (SARA).** It gave authority to the EPA to oversee the cleanup of federal facilities. It also gave EPA the final authority to select the remedial action at federal facilities placed on the **National Priorities List (NPL)**.

The Army's IRP is a progressive, comprehensive program aimed at identifying, investigating, evaluating, and cleaning up former waste and disposal sites contaminated from accidental spills, runoff, and past waste disposal practices. Additionally, the IRP guides the Army as it takes action to eliminate possible hazards these sites might pose to public health and the environment. While the VAAP cleanup is being conducted under the Army's IRP, the EPA decided in 1996 that the site did not qualify for NPL status and granted the TDEC Superfund Division authority to regulate VAAP's remediation program in March 1997.

Under the Army IRP, VAAP began investigations in 1978 with an assessment by the U.S. Army Toxic and Hazardous Materials Agency. The Army has since conducted numerous investigations to define the extent of the contamination discovered in the soil, sediments, and groundwater at or near the **trinitrotoluene (TNT)** manufacturing facilities as well as in groundwater at other installation sites and in off-site wells and springs. In July 1997 the Army submitted a draft installation-wide feasibility study, outlining possible cleanup options. To date, five off-post residents have been connected to the public water supply (following a 1994 well survey), the sanitary landfill at site (SWMU #9) was closed in April 1996, and the World War II burning ground (also site SWMU #9) was closed in May 1999. Currently, the Army with oversight by EPA and TDEC is amending the draft installation-wide site investigation, remedial investigation, and feasibility study. Since these studies were completed, additional areas of concern have been identified and are being assessed.

At the beginning of investigations at VAAP, the EPA intended to issue an order and agreement under Section 106 of CERCLA. Investigations conducted at VAAP until recently were performed mainly under CERCLA guidelines. When the site was not placed on the NPL and was placed under TDEC Superfund Division oversight, the EPA decided not to issue the CERCLA order and agreement. After TDEC consulted with EPA on appropriate regulations to govern the site, the EPA in 2001 issued a corrective action **administrative order** under Section 3008(h) of the **Resource Conservation and Recovery Act (RCRA).** This section covers corrective action

programs that are the counterpart of Superfund but which generally take place at facilities that continue to operate.

These early investigations and cleanup activities are conducted in accordance with the Army IRP guidelines, originally CERCLA and now RCRA, and applicable or relevant and appropriate federal, state, and local laws.

Congress codified the **Defense Environmental Response Program (DERP)** (10 USC 2701-2707 and 2810, SARA Section 211) which set up a fund for the Department of Defense to clean up its sites since EPA Superfund money is not available for the cleanup of federal facilities. The DERP specifies the type of cleanup responses that the fund can be used to address.

The public participation program for the VAAP site must comply with Superfund regulations as well as with public participation requirements included in the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** and RCRA. The Army will implement all required public participation activities in addition to other activities it believes are useful in providing the community with information and opportunities for dialogue.

A brief explanation of the RCRA milestones is provided below. Please note that RCRA Section 3008(h) does not specify any public participation requirements for any of these milestones, but the EPA's "RCRA Public Participation Manual" lists activities for involving the public through activities that are strongly recommended. Nonetheless, the EPA, TDEC, and the Army all support keeping the community apprised and involved in the cleanup activities conducted at VAAP. In the public participation activities and schedule table of this plan (Section 5.4), the activities are identified as being either required (strongly recommended) or additional proposed activities that are not required but possibly are needed in specific circumstances.

Cleanup Process

According to the cleanup process outlined and summarized by EPA in its "RCRA Public Participation Manual," a public participation plan must be prepared or updated, based on community interviews. The plan provides a record of community concerns at the outset of the cleanup process and outlines how the Army will keep the community involved and informed about the site. In addition, an **administrative record file** and an **information repository** for a site must be set up at locations convenient to the community, such as at libraries and town halls. The repository contains documents and information related to the site's remediation program. (See Appendix C for the location of the information repository for the VAAP Site.) The information repository and an administrative record file were established for the site at the Environmental Office at VAAP and the main branch of the Chattanooga-Hamilton County Bicentennial Library. The administrative record file contains all documents and correspondence that have a bearing on the decision-making process.

In accordance with the CERCLA cleanup process under which the Army began its investigations, the Army conducted a **preliminary assessment (PA)** and **site inspection (SI).** Once these were completed, the Army conducted an extensive environmental investigation (called a **remedial investigation or RI**) and analysis of possible cleanup alternatives (called a **feasibility study or**

FS). Now that the site is under a RCRA 3008(h) consent order, designations for similar types of studies are different and are reflected in Table 2-1 below. Throughout this document you may find references to older studies conducted under CERCLA-like guidelines and which use CERCLA designations for these studies as well as newer activities conducted under RCRA regulations.

Table 2-1. CERCLA and RCRA Cleanup Activity and Abbreviation Conversions	
CERCLA Activity and Abbreviation	**RCRA Activity and Abbreviation**
Preliminary assessment (PA)	RCRA facility assessment (RFA)
Site investigation (SI)	Confirmation study (CS)
Remedial investigation/feasibility study (RI/FS)	RCRA facility investigation/corrective measures study (RFI/CMS)
Remedial design (RD)	Design (DES)
Remedial action (construction) (RA(C))	Corrective measures implementation (construction) (CMI(C))
Remedial action (operations) (RA(O))	Corrective measures implementation (operation) (CMI(O))

Under RCRA, the corrective action process begins with a site assessment, called a **RCRA facility assessment** or **RFA**. The purpose of the assessment is to gather data about a site, including release and potential releases of hazardous waste and hazardous constituents, to determine whether a cleanup may be necessary. The report of this assessment usually serves as the basis for future corrective actions at an installation. If after completing the RFA, it appears likely that a release exists, then the Army develops facility-specific corrective action requirements for completion at specific times, which are included in the corrective action order.

The next major milestone under RCRA is the site characterization, called a **RCRA facility investigation** or **RFI**, which is necessary when a release or potential release has been identified and additional information is necessary to determine the nature and scope of corrective action, if any, that is needed. The purpose of this step is to characterize the nature and extent of contamination at the facility and to support the selection and execution of a cleanup remedy or remedies or, if necessary, interim measures.

If the Army decides that some immediate action needs to occur to protect human health or the environment before the cleanup process can be completed, it may conduct an **interim action**. An interim action is a response action under RCRA to control and decrease ongoing risks to human health or the environment. An interim action also may be required to prevent further environmental degradation or contaminant migration before a final remedy is implemented. While the interim activities conducted to address a problem may eventually become the final cleanup remedy for a site, they may occur at any stage of the process. They also must be consistent with any cleanup remedy selected for the site.

Once the need for corrective measures has been verified by investigations, the Army performs a **correctives measures study** or **CMS** to identify and evaluate potential **remedial** or cleanup alternatives. Once the alternatives have been evaluated, the Army proposes a preferred remedy

from the alternatives identified. The proposed remedy then undergoes public review and comment, usually in the form of a proposed modification to the facility's corrective action order. Following public review, the regulating agency responds to the public comments and then modifies the corrective action order to add the remedy.

A 30- to 45-day (minimum, depending upon the activity under consideration) **comment period** may be provided whenever plans or the preferred remedy are released. During the comment period, members of the public are invited to send written comments to the contact person(s) identified in the public notice. In addition, the Army may hold a public meeting or information session, if necessary, to take oral and written comments and to answer questions from the community about the proposed remedy.

After the close of the comment period, the Army, EPA, and TDEC take the public's comments into consideration before making a final decision about the cleanup proposal. The record of the public's comments and the Army's responses to those comments is contained in a document called a **response to comments.** The summary becomes a part of the final decision document, known as the **decision document**. The decision document then is signed by representatives of the EPA, Region IV, TDEC, and the Army which command? and is placed in the information repository for public review. The Army then implements the selected cleanup alternatives in the process known as the **corrective measures implementation** or **CMI**. This step in the process typically involves a detailed remedy design, remedy construction, and remedy operation and maintenance.

Although the process described is usual for RCRA investigations and cleanups, the corrective action process is not linear. The elements described should not be viewed as prescribed steps on a path, but as evaluations that are necessary to support good cleanup decisions. Because these elements may not occur in the same order (or at all) at every facility or site, they are general guidelines that leave flexibility for changes. (See Figure 2-1 for a graphic summary of the cleanup process under RCRA.)

What Is RCRA?

The Resource Conservation and Recovery Act (RCRA), a federal law enacted in 1976 and amended in 1984, requires facilities to implement corrective actions to clean up contamination from both present and past waste management practices. Volunteer Army Ammunition Plant is being cleaned up as a corrective action enforcement order under RCRA Section 3008(h).

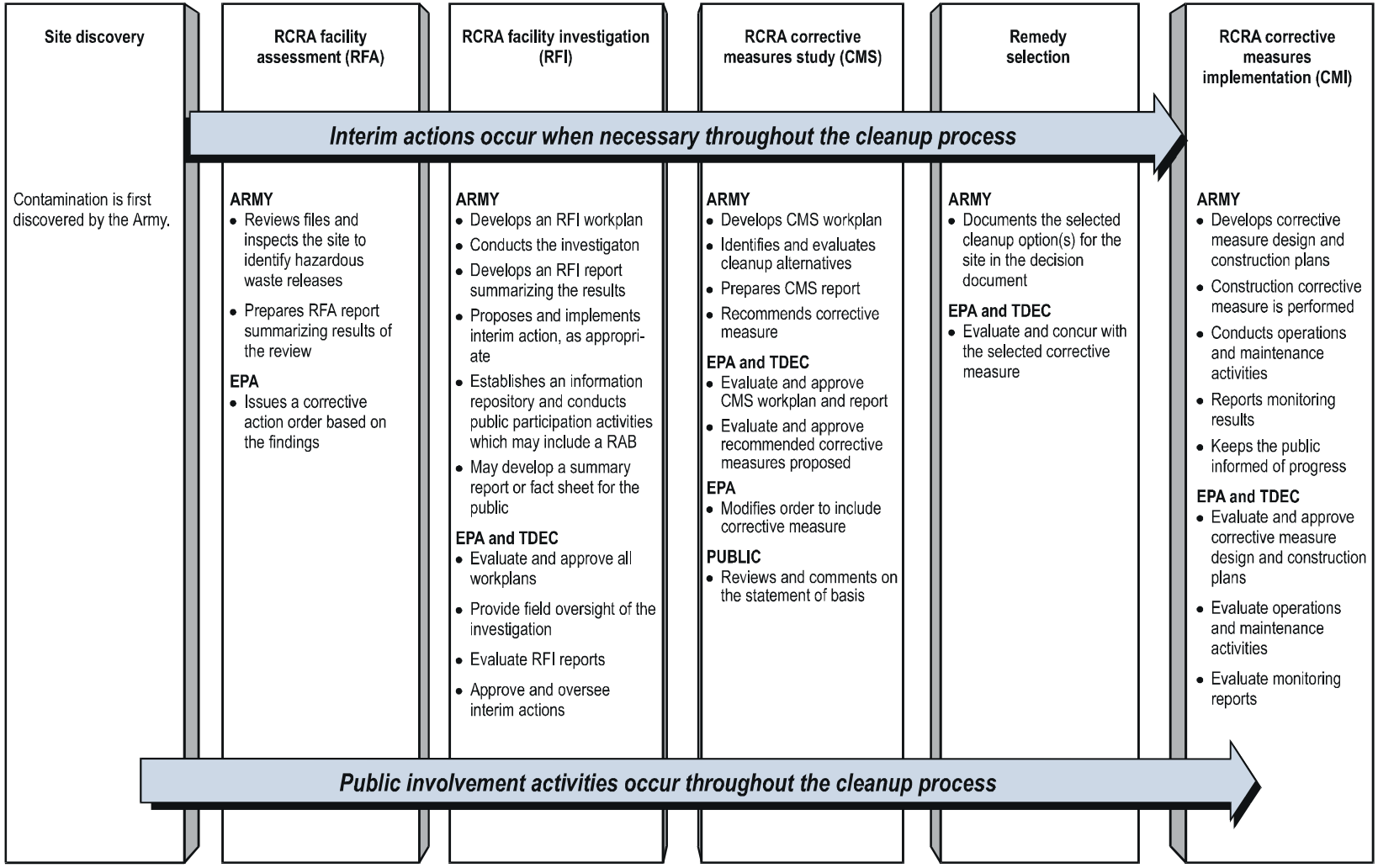

Figure 2-1. The Cleanup Process at Volunteer Army Ammunition Plant

3.0 Facility Description and History

This section describes where VAAP is located, how the facility has been operated over the years, and details of the types of contamination that have been found on site.

3.1 Facility Location and Land Use

VAAP occupies a total of 6,350 acres (plus or minus transferred acreage) in eastern Hamilton County, Tennessee, approximately 10 miles northeast of Chattanooga's central business district. Approximately 60 percent (3,810 acres) of the total installation area is covered by forest. The remaining 2,540 acres consist of improved, semi-improved, and unimproved areas adjacent to administrative and former manufacturing areas. The surrounding areas of Hamilton County and Chattanooga have expanded to include the development of residential, commercial, and industrial areas in the vicinity of VAAP.

3.2 History of VAAP

3.2.1 Site Activities, Excluding the Leased Area

The Corps of Engineers built the original TNT production facility between 1941 and 1943. The plant included 16 TNT batch process lines and related acid facilities (nitric and sulfuric acids). Initial operations began in July 1942 with Hercules Powder Company of Wilmington, Delaware, as the operating contractor. The plant continued production until 1945. By that time, over 8,000,000 pounds of TNT had been produced. The plant was then placed in standby status from January 1946 until the spring of 1952. During this period of time, the government maintained the plant.

In the spring of 1952, the plant was reactivated in support of the Korean War. The Army awarded operation of the plant to Atlas Powder Company of Wilmington, Delaware. More than 283,000,000 pounds of TNT were produced from 1953 until the plant was shut down and placed in standby status in 1957. The plant was again reactivated in 1965 as a result of the Vietnam War. Ten of the old TNT batch processing lines were operated until 1969, when the production requirements began to decrease. After 1969, the number of batch processing lines in operation was reduced until all production using the old batch TNT lines ceased in 1975.

New acid facilities were built between 1970 and 1972, and the Army modernized the TNT production facilities between 1971 and 1975, when six new continuous process lines were built in an area where four of the old batch process lines were previously razed. Only one of the new continuous process lines, however, was operated from 1974 until 1977, when the last TNT production occurred. During the period of 1965 to 1977, the Army produced approximately 1.8 billion pounds of TNT at VAAP.

In 1972, Atlas Chemical Industries, the operating contractor, was purchased by ICI Americas Incorporated. ICI Americas, Inc.'s contract expired in December 1998. The plant currently is in inactive excess status, and Tecumseh Professional Associates, Inc. is the new operating contractor.

3.2.2 Leased Area Activities

The area now known as the CFI Lease Area initially was used by the Army for nitric and sulfuric acid production from 1942 to 1945 and from 1952 to 1957. In 1962 the CFI Lease Area was established when the Army leased that land to CFI Industries, Inc. (CFI). CFI used the leased 824-acre site for the commercial production of ammonium nitrate fertilizer, urea, and related products. At the start of the Vietnam War in 1965, the Army reclaimed the use of all the existing acid production equipment in the CFI area to increase its nitric acid production and sulfuric acid concentration capacity. CFI constructed a new acid plant adjacent to the ammonia plant they had previously built for their commercial ammonium nitrate production and simultaneously operated the old acid plants to produce nitric acid and concentrated sulfuric acid for VAAP.

As a part of the TNT production, the Army also manufactured sellite, nitric and sulfuric acids, and certain chemical byproducts. These chemicals were necessary building blocks for the manufacture of TNT. No other explosives or chemicals were ever manufactured at VAAP.

Commercial production by CFI continued until 1982 when all operations were terminated for economic reasons. During 1985 and 1986, all of the CFI production areas were dismantled for salvage. CFI no longer leases the property. Former Army acid production facilities were not dismantled, however, until 1997.

Currently, there are __ civilian Army employees on site and ___ contractor employees. Current tenants include the Hamilton County Board of Education, _____, and _____.

3.2.3 Recent Ownership and Regulatory Changes

The Army determined that VAAP was excess to its needs in 1997. In Congress, legislation was passed to transfer approximately 1,033 acres to Hamilton County/City of Chattanooga. The General Services Administration, which is the disposal agency for the Army, is acting as the executing agency for all property transfer actions. Hamilton County and the City of Chattanooga bought 940 acres in September 2000 for $7.5 million under early transfer authority. In April 2002, the 940-acre tract was named the Enterprise South Industrial Park.

Since March 1997, TDEC has reviewed documents and provided constructive comments in an informal partnering spirit in the absence of an interagency agreement. In late 2000, TDEC consulted with EPA Region IV on appropriate actions. It was determined that EPA would issue a corrective action administrative order under RCRA Section 3008(h) to the Army. The administrative order was issued in January 2001 and signed the following November.

The order directs the Army to evaluate fully the nature and extent of releases of hazardous waste and constituents into the environment and to take corrective action necessary to mitigate any migration of releases at or from the facility. Under the provisions of the order, the Army also is responsible for addressing contamination that has migrated to property not currently owned by the Army. This order is not directed to the City of Chattanooga or Hamilton County in any manner regarding their recently acquired 940-acre tract, known as Enterprise South Industrial Park.

3.3 History of the Environmental Program at VAAP

As mentioned, previously, the IRP at VAAP began with the completion of the installation assessment by the U.S. Army Toxic and Hazardous Material Agency in 1978. Numerous additional investigations have followed.

TNT-related contaminants have been found in soils, sediments, and groundwater at or near the TNT manufacturing facilities. TNT-related contamination also has been documented in a downgradient well at the New Landfill/Burning Ground Area site (VAAP-015). Arsenic, lead, **polychlorinated biphenyls (PCBs)**, and **polycyclic aromatic hydrocarbons (PAHs)** have been detected in soil near former processing facilities. Metals (arsenic, chromium, lead, and thallium), PCB and PAH compounds have been detected in on-post sediment samples. Metals (including arsenic and lead), nitroaromatic explosives (TNT and TNT byproducts, and rapid detonating explosives, also known as RDX), and chloroform have been detected in on-post surface waters. PCBs have been detected in surface water, sediment, and fish tissues.

In the baseline human health assessment, the Army recommended that fish advisories be posted at all on-post ponds, warning of elevated PCBs in fish. During a site visit by the **Agency for Toxic Substances and Disease Registry (ATSDR)**, "No Fishing" signs were observed at the ponds accessible by the general public.

The Army found off-post contamination in residential wells and springs in the Waconda Bay area north of the installation. Bottled water was furnished to off-site residents for approximately one year (1995-96). In 1996-97, a total of 28 wells were identified and sampled from a residential survey in this area. Results indicated that four wells were contaminated, and three of those residents opted to be connected to the public water supply. Two residences with drinking water wells in the vicinity that had not been tested also were connected to water at their request. Groundwater uses identified from the survey include heat pumps, garden supply, and for drinking water. As a follow-up, the Army began an additional study in 2001 to identify and sample residents' wells in the vicinity of VAAP, and that study is ongoing.

The Army performed the site investigation, remedial investigation, and feasibility studies on the installation as a whole. This resulted in one draft **site inspection (SI)** report, one draft **remedial investigation (RI)** report, and one draft **feasibility study (FS)** report completed for the installation. The Army submitted the draft site investigation report to both EPA Region IV and the State of Tennessee for review and comment in December 1994. The draft remedial inspection report was submitted for review in June 1995, and the draft feasibility study report

was submitted in July 1997. Questions arose over the administration of the cleanup work as to whether it should be conducted under RCRA or Superfund, and whether under EPA or TDEC oversight. TDEC's Superfund Division became the lead regulatory agency in 1997. The State and EPA Region IV, in cooperation with the Army, are in the process of amending the draft site inspection, remedial investigation, and feasibility study. VAAP, through the Corps of Engineers, initiated a contract in March 1998 to complete basewide decision documents and supplemental work. Additional areas of concern were identified and are to be assessed.

3.4 Site Descriptions

The following sections describe the IRP sites in greater detail. Figure 3-1 shows where each of these sites is located, and a summary of this section appears in Appendix D. Over the years, designations for each site changed. For those who may read older technical documents about VAAP environmental sites, Appendix E provides a cross reference for site names and numerical designations.

3.4.1 East Acid Area (AOC #1)

The Old East Acid Area, AOC #1, site encompasses approximately 18 acres east of the central TNT production facilities on the western half of VAAP. The East Acid Area was operated intermittently during the various periods of mobilization from 1941 to 1970. The area consisted of nitric and sulfuric acid production facilities, an oleum production facility, and an ammonia storage facility. Except for a number of aboveground storage tanks, the production facilities were disassembled, decontaminated, and sold in 1974.

A site investigation was performed in 1994. The results of the site investigation indicated that a remedial action was necessary, and a feasibility study was developed without first fully defining the vertical and horizontal extent of contamination. After a review of the draft feasibility study,

the Army determined that a letter of understanding of the extent of contamination would be required before a final feasibility study could be completed.

Supplemental sampling was completed in 1999. Results indicated contamination in soil surrounding the former production buildings is more widespread than originally believed. The vertical extent of soil contamination above proposed **preliminary remediation goals** is limited to the upper 10 feet.

Proposed Plan

The soil remediation alternative will be chosen when the feasibility study is final. Considering the small volume of contaminated soil (approximately 2,500 cubic yards), however, the Army wants to excavate and move the soil to an off-site, regulatory-approved facility. A supplemental

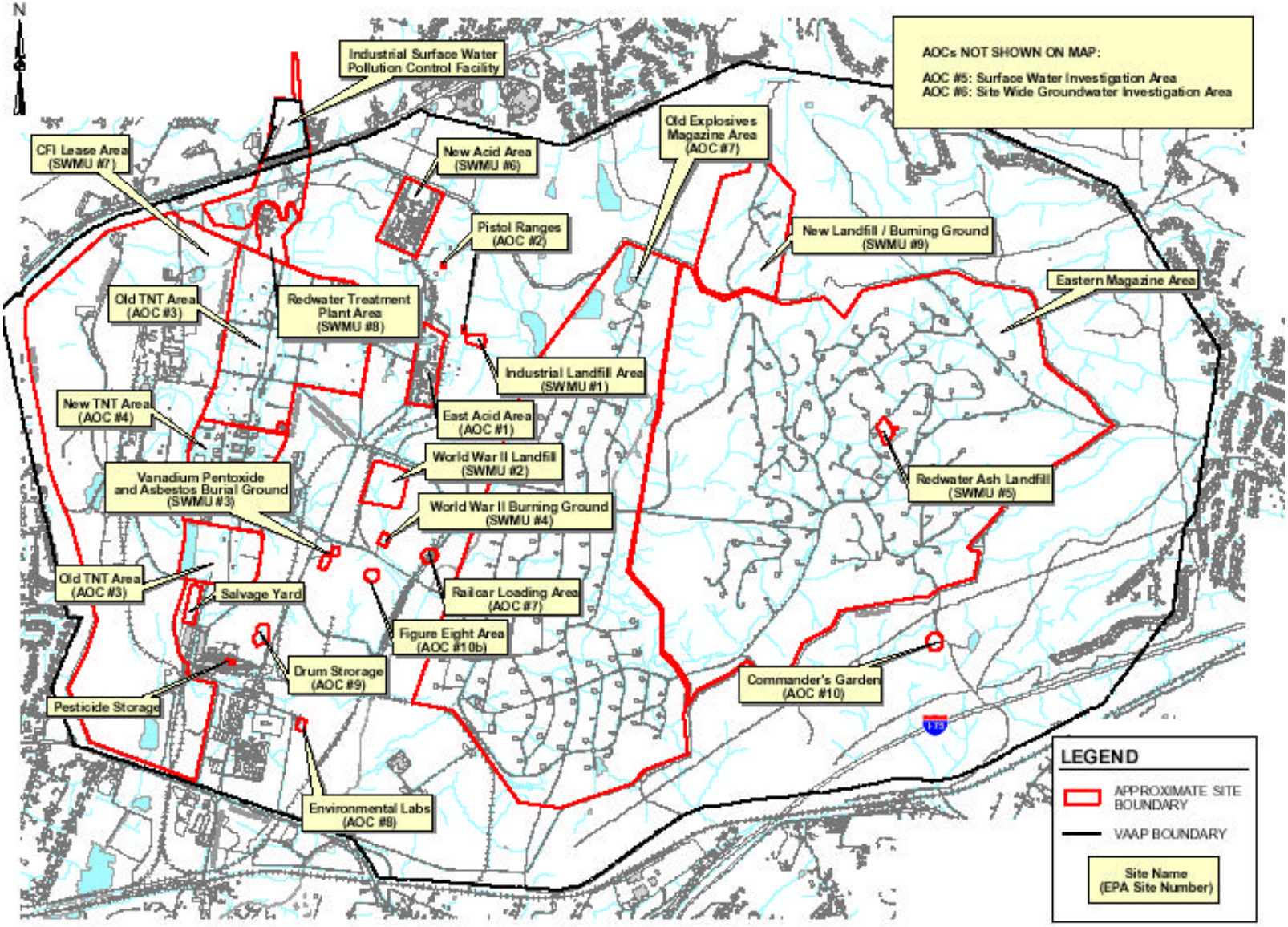

Figure 3-1. Location of Environmental Sites

report (which meets the substantive requirements of a RCRA facility investigation) will be developed to describe the nature and extent of the contamination.

Any groundwater contamination and long-term monitoring will be addressed under AOC #6 site activities.

3.4.2 Pistol Ranges (AOC #2)

The Pistol Range site, AOC #2, consists of two closed pistol ranges (used until 1995) for training by the VAAP security guards. The ranges are located in the northern portion of the installation.

The Army completed a site investigation in December 1998. Results indicated high levels of lead in the soil and lead slugs on the surface.

Proposed Plan
This site is ineligible for Army Environmental Restoration funding. Previous analytical results indicate there is lead contamination in the surface soils. Further delineation and a remedial action will be necessary.

3.4.3 Old TNT Area (AOC #3)

The Old TNT Area is located in the center of the area known as the TNT Manufacturing Valley. Production facilities consisted of 16 batch process TNT lines that were situated on approximately 330 acres between 1942 and 1975. Presently, only the foundations of the old batch process lines remain. After the Korean War, six of the lines (lines 7 through 12) were dismantled, along with the South Acid Area. After 1969, the number of batch lines used for TNT production decreased from 10 to one.

The batch process lines in the Old TNT Area are divided into four groups: Batch lines 1 through 6, 7 through 10, 11 and 12, and 13 through 16, numbered sequentially from north to south. The North Acid Area served lines 1 through 6.

The remedial investigation indicated that total petroleum hydrocarbons and semi-volatile organic compounds were found in the soil and groundwater.

3.4.4 New TNT Area (AOC #4)

The New TNT Area is located in the center of the area known as the TNT Manufacturing Valley at batch lines 7 through 10. The site consists of six Canadian Industries, Limited (CIL) continuous process lines. The area is approximately 80 acres. In this process, six nitration stages occurred within a single structure. To support the CIL lines, two acid fume recovery buildings (810-A and D), a pump house, and tank farm were constructed.

All redwater and yellow water waste generated during the TNT manufacturing process was sent to the Redwater Treatment Plant in an enclosed pipeline constructed above the East TNT Ditch.

Sampling conducted in 1994 for this area and reported in the remedial investigation indicates the presence of total petroleum hydrocarbons and semi-volatile organic compounds in the groundwater, surface water, and surface soils.

3.4.5 Surface Water Investigation Area (AOC #5)

In the 1995 remedial investigation, surface water drainage for the entire facility, particularly as it affects contaminant migration off site into Waconda Bay, was addressed through an assessment of the cumulative effects of multiple sources at the remedial investigation/feasibility study sites. VAAP was divided into six surface water drainage basins (Drainage Basins A through F). Remedial actions are required for affected surface water bodies and to mitigate the continued impact on these water bodies.

The sources of contamination included industrial waste ditches, acid neutralization ponds, and water pollution control ponds located in the industrial areas of VAAP. Appropriate source control and/or remediation of sediments will be addressed in the corrective action for the SWMU associated with each pond or ditch. The remedial investigation identified the following ponds and ditches for the Surface Water Investigation Area: Silt Retention Pond, pH Control Pond; COE Pond, Final Settling Pond, Pond 1, Pond 7, Pond 10, East TNT Ditch, and the West TNT Ditch.

Sampling conducted for the remedial investigation indicated that surface water and sediments in the Surface Water Investigation Area contain elevated levels of multiple contaminants such as pesticides, metals, explosives, PAHs, and PCBs.

3.4.6 Sitewide Groundwater Investigation Area (AOC #6)

The Sitewide Groundwater Investigation Area site, AOC #6, includes groundwater conditions from the following sites:

- East Acid Area (AOC #1)
- Old TNT Area (AOC #3)
- New TNT Area (AOC #4)
- Old Explosives Magazine Area (AOC #7)
- Industrial Landfill Area (SWMU #1)
- World War II Landfill Area (SWMU #2)
- Vanadium Pentoxide and Asbestos Burial Ground (SWMU #3)
- World War II Burning Ground (SWMU #4)
- Redwater Ash Landfill (SWMU #5)
- New Acid Area (SWMU #6)
- CFI Lease Area (SWMU #7)
- New Landfill/Burning Ground (SWMU #9)
- Eastern Magazine Area
- Industrial Surface Water Pollution Control Facility.

This site addresses all groundwater treatment systems as well as installation-wide long-term monitoring.

The Army has had great difficulty defining the extent of groundwater contamination due to the karst geology beneath the site and groundwater flow directions. The Army has confirmed migration of contaminants off site. Explosives concentrations are much higher in on-post wells than in off-post wells and springs, however.

Nonetheless, concentration levels detected in off-post wells are above State standards. None of these wells currently are used for drinking water.

The Army currently is performing supplemental RCRA facility investigation activities. There currently are 153 groundwater monitoring wells across the installation. Twelve wells are being monitored to update the latest data gathered in 1994 and to determine seasonal changes in contaminant concentrations. After installing 11 new eastern perimeter monitoring wells, the Army sampled these wells and determined they contain explosives and metals. Sampling to confirm these results is underway.

Proposed Plan

As part of a comprehensive groundwater study, the Army will add monitoring wells to the existing system. The Army has evaluated interim measures to control or address the off-site migration of contaminated groundwater. No effective interim measures were identified, however.

- **Well Survey** - The Army will initiate and complete planned phases of the water survey. EPA has funded Phase 1 in order to allow Army funding to become available for remaining phases. Phase 1 will obtain basic information, including confirming 1994 well survey data, to help follow-on requirements. This also will include a door-to-door survey of residences to identify and sample residential wells in the vicinity of VAAP. The Army will develop a comprehensive installation-wide groundwater monitoring plan, including off-post areas, and a work plan will be developed for sediment, springs, and seeps.

- **New Acid Area** - The Army will install 12 monitoring wills around the New Acid Area and monitor them quarterly for one year.

- **CFI Area** - The Army will install approximately 10 monitoring wells around the CFI area and analyze the new wells once to evaluate results.

- **East Acid Area** - The Army will install approximately 10 monitoring wells around the East Acid Area and analyze the new wells once to evaluate results.

- **Burning Ground/Landfill** - The Army will monitor the existing wells for explosives, nitrates, and metals.

- **TNT Manufacturing Area** - Remaining Army funds from the groundwater feasibility study will be used for remedial investigation efforts which include installing approximately 20 new wells in addition to the existing wells. These new wells also will be augmented with

approximately 20 bedrock wells for comparative purposes. The Army will analyze the results one time, but a portion of the wells will require quarterly monitoring, depending on results.

Currently Planned Remediation Action - For funding planning purposes only, the Army plans remedial action at this site to be groundwater extraction and treatment.

3.4.7 Old Explosives Magazine Area (AOC #7)

The Old Explosives Magazine Area site, AOC #7, consists of the westernmost of the two magazine areas located in the eastern half of the installation. The site contains 100 igloo-type magazines for storage of final TNT product. Explosives are no longer stored at VAAP.

One small area (approximately 300 square feet) near the railcar loading area requires cleanup of explosives.

A portion of this site was included in the 940 acres sold to Hamilton County and the City of Chattanooga for $7.5 million in September 2000. A supplemental investigation was conducted by TDEC, and contaminants were discovered in soil, sediment, and groundwater. A removal action was completed in September 2001.

Proposed Plan

The Army removed contaminated soil, and a report will be generated for EPA and TDEC. Some contamination still exists on site under Building 908-4 near the railcar loading area (not located on the transferred 940 acres). A decision on the remaining contamination is pending.

Any groundwater contamination and long-term monitoring will be addressed in cleanup activities conducted for site AOC #6.

3.4.8 Environmental Labs (AOC #8)

The Environmental Labs site, AOC #8, is a former environmental laboratory used to perform water quality analyses. A focused site investigation was performed in January 1999. Results indicate that no contamination is present at the site.

Proposed Plan

EPA and TDEC concurred in July 2001 that no further action is necessary.

3.4.9 Drum Storage (AOC #9)

Identified by the Army and TDEC as a barren area and historical drum storage area, this site originally gave no indication of drum storage in an initial visual site inspection. Sparsely vegetated or barren in spots, this site is located in the southwest region of the facility near the Salvage Yard. Surface soil samples were collected at this site in October 2000. The Army and TDEC found semi-volatile organic compounds, metals, and PAH concentrations, but all were below preliminary remediation goals.

Proposed Plan

The Army recommends that no further action is needed at this site, since there is no evidence of contamination and the compounds detected were at concentrations below EPA and Army/TDEC preliminary remediation goals.

3.4.10 Commander's Garden (AOC #10)

The Army previously identified this site, located off Patrol Road in the southeast portion of the facility, as a circular barren area. It lacks old growth such as trees and is primarily vegetated with scrub brush. Signs of camping and campfires were evident during a visual site inspection. Surface soil samples were collected at this site in October 2000. The Army found semi-volatile organic compounds, metals, and PAH concentrations, but all were below preliminary remediation goals.

Proposed Plan

The Army recommends that no further action is needed at this site, since there is no evidence of contamination and the compounds detected were at concentrations below EPA and TDEC preliminary remediation goals.

3.4.11 Figure Eight Area (AOC #10b)

The Army and TDEC originally classified this site as a barren area, however, trenches were identified during visual inspections and during trenching activities related to the soil sampling. Surface soil samples were collected at this site in October 2000, and subsurface samples were collected from identified trenches in March 2001. Five trenches were identified and excavated: Trenches 1, 2, and 3 at the western-most barren area, and Trenches 4 and 5 southeast of Trenches 1 and 2. They ranged in depth from four to 10 feet.

The Army found **benzo(a)pyrene**, semivolatile organic compounds, metals, PCB and PAH concentrations, but all except PAHs were below preliminary remediation goals.

Proposed Plan

The Army recommends a RCRA facility investigation or an interim soil removal action due to the total PAH concentrations greater than the TDEC preliminary remediation goals in Trenches 1, 2, 5, and a hummock. Additional surface and subsurface sampling is needed to determine the extent of the contamination. An interim soil and debris removal also may be needed.

3.4.12 Industrial Landfill Area (SWMU #1)

The Industrial Landfill Area site, SWMU #1, is located approximately 800 feet east of the East Acid Area in an undeveloped part of VAAP. The site consists of a two-acre unlined landfill for decontaminated industrial waste and construction debris. The landfill has been in operation from the 1970s to the present.

Proposed Plan

Based on historical contamination that can be attributed to past practices, this site is now eligible for Army Environmental Restoration funding. The Army will conduct a RCRA facility investigation, including soil sampling and trenching. Groundwater sampling will be addressed by activities conducted for site AOC #6.

3.4.13 World War II Landfill Area (SWMU #2)

The World War II Landfill Area site, SWMU #2, is located in the west-central portion of VAAP. The site comprises 10 to 15 acres and consists of an unlined landfill that operated between 1941 and the late 1960s. The landfill and disposal trenches reportedly received redwater ash, redwater sludge, and refuse.

The Army conducted a focused site investigation in 1994. Results indicated low levels of explosives and organics in groundwater. The Army completed investigative trenching in September 2000. Soil contaminants were detected at this site.

Proposed Plan

Soil and groundwater findings require additional investigation. Any groundwater contamination and long-term monitoring will be addressed by activities conducted for site AOC #6.

3.4.14 Vanadium Pentoxide/Asbestos Burial Ground (SWMU #3)

The **Vanadium Pentoxide**/Asbestos Burial Ground site, SWMU #3, is located east of the new TNT production facilities and consists of two acres containing two marked, unlined burial areas. One area contains approximately 70,000 pounds of vanadium pentoxide buried in drums, and the other contains approximately 107 tons of double-bagged asbestos pipe insulation.

The Army performed groundwater sampling in 1994.

Proposed Plan

The Army completed a remedial action and the site has been closed. A deed restriction is required for the asbestos burial site. The Army will complete a removal report documenting the removal and the nature and extent of any remaining contamination. The document will contain the rationale for any contamination remaining on site.

3.4.15 World War II Burning Ground (SWMU #4)

The World War II Burning Ground site, SWMU #4, is located on approximately 2.5 acres south of the Old Acid Area between the TNT production facilities and the Old Magazine Area. Explosives-contaminated material was burned in an open, unlined pit at this site from 1941 until the early 1960s.

The Army completed a focused site investigation in 1994. Results indicated low levels of explosives and organics at the site.

Proposed Plan

The Army will collect additional samples to confirm earlier results.

3.4.16 Redwater Ash Landfill (New Magazine Area) (SWMU #5)

The Redwater Ash Landfill site, SWMU #5, is located in the east-central portion of VAAP within the New Magazine area. Redwater ash and gypsum sludge were disposed over this three-acre site. A marshy area is located at the southern end of the landfill. This standing water eventually drains to the southeast, where it leaves this site. The Army believes the unlined landfill is located in a sinkhole.

The Army completed a focused site investigation in 1994. Results indicate the presence of PAHs and metals.

Proposed Plan

The Army is conducting a follow-on site investigation. The Army will install wells at this site. Funding for the wells, however, will be addressed by activities conducted for site AOC #6.

Any groundwater contamination and long-term monitoring will also be addressed under AOC #6.

3.4.17 New Acid Area (SWMU #6)

The New Acid Area, SWMU #6, encompasses approximately 50 acres located north of the East Acid Area. The production area was located on only 18 of the acres. The site consists of acid production facilities constructed between 1969 and 1973 to support the new TNT production lines. The acid production facilities were constructed on top of a former burning ground and redwater ash disposal site, which were located at or near sinkholes. The area was filled to allow for the construction of the new acid facility, making the former burning ground and disposal site 50 to 80 feet below ground level. The relatively short period of acid production on site is not expected to have caused a severe environmental impact. Groundwater contamination is complicated, however, by the presence of karst geology beneath the site.

The Army performed a limited site investigation in 1999. Results indicated arsenic concentrations exist at the site above preliminary remediation goals.

Proposed Plan

VAAP has submitted a request to TDEC for no further action for the soils at the site. TDEC will not be able to approve the request, however, until a groundwater study is finished. The Army will submit a report to EPA and TDEC, including recently collected data from this site.

Any groundwater contamination and long-term monitoring will be addressed by activities conducted for site AOC #6.

3.4.18 CFI Lease Area (SWMU #7)

The CF Industries, Inc. (CFI) Lease Area, SWMU-#7, consists of approximately 686 acres located along the western boundary of VAAP. Of these 686 acres, only 56 acres cover where the actual production facilities were located. The area contains a number of former plant facilities for the production, handling, and storage of nitric acid, ammonium nitrate, and urea, as well as sulfuric acid concentration facilities. In addition, former urea and fertilizer facilities were located at this site.

Concrete foundation slabs remain for all the buildings that have been razed.

The Army conducted a site investigation in 1994. The results of the investigation indicated that a remedial action was necessary, so the Army developed a feasibility study without first fully defining the vertical and horizontal extent of contamination. After a review of the draft feasibility study, the Army determined that a letter of understanding of the extent of contamination would be required before a final feasibility study could be completed.

The Army completed supplemental sampling in 1999. Results indicate contamination in soil surrounding the former production buildings is more widespread than originally believed. The vertical extent of soil contamination above proposed preliminary remediation goals is limited to the upper 10 feet.

Proposed Plan

An interim action work plan will be submitted to TDEC and EAP. The Army then will conduct an interim removal action followed by a corrective measures study. As part of the removal action, metals are anticipated to be stabilized on site. The Army will dispose of other contaminants off-site. The approximate volume of soil to be removed is 13,000 cubic yards.

In addition, the Army will submit a report on the balance of the CFI Lease Area to regulatory agencies. Any groundwater contamination and long-term monitoring will be addressed under activities conducted to clean up AOC #6.

3.4.19 Redwater Treatment Plant Area (SWMU #8)

The Redwater Treatment Plant Area was designed to treat and/or destroy the water-soluble sodium salts of a byproduct of TNT purification with sellite, pink water (water containing TNT), and yellow water (acidic water containing dissolved TNT)--all wastes produced in TNT manufacturing. The area, consisting of several buildings, tanks, tank cradles, retention ponds, and a redwater flume, is located on approximately 9.4 acres at the northern end of the TNT Manufacturing Valley. The plant has not operated since VAAP was placed on inactive status in 1977.

Treatment of redwater waste included settling of suspended TNT particles in two aboveground tanks. A six-million gallon capacity concrete lined lagoon (Reservoir 836) was used for

temporary storage. Liquor resulting from wastewater treated in evaporator units was incinerated on site to produce redwater ash. In the 1960s, the ash was disposed of in the Redwater Ash Landfill located in the Eastern Magazine Area between magazines 154 and 178. The Redwater Ash Landfill is treated as a separate SWMU. The landfill has subsequently been covered with soil and is inactive.

The Red Water Treatment facilities remain in place, and Building 816 is VAAP's only designated State historical structure. Limited disposal occurred at the site. The Army suspects contamination to be primarily the result of spills during production. Groundwater contamination is complicated by the presence of karst geology beneath the site.

Initial remedial investigation results indicated total petroleum hydrocarbons and semi-volatile organic compounds.

The Army has completed a remedial investigation report, draft risk assessment, and draft final feasibility study. They have not been finalized, however, pending an agreement with regulatory agencies on a suitable risk-based approach to the contaminants of concern.

Proposed Plan

The Army will revise and finalize the risk assessment and feasibility study, with TDEC and EPA participation and ultimate approval. The Army will use two future use scenarios–unrestricted and parks/recreational. Unrestricted use will be used primarily for background purposes, while parks/recreational will be evaluated for appropriateness of the currently planned future land use. This finalized risk assessment will be used to determine some realistic remediation goals.

Groundwater contamination will be addressed by activities conducted for site AOC #6.

3.4.20 New Landfill/Burning Ground (SWMU #9)

The New Landfill/Burning Ground site, SWMU #9, encompasses approximately 80 acres, including a 0.6-acre burning pad, a 225-square-foot flash pad, and a 3.2-acre unlined landfill. The site is located north of the New Magazine Area, in the eastern half of the installation. Closure of the landfill under RCRA guidelines occurred in April 1996. The Army continues to monitor the site.

TDEC issued a "clean" RCRA closure in May 1999 for the burn pad in accordance with the groundwater being addressed under CERCLA.

Proposed Plan

EPA requires a corrective measures study for groundwater, surface water, and sediment. Any further groundwater action will be addressed by activities described in the proposed plan for groundwater at site AOC #6.

3.4.21 Salvage Yard

The Salvage Yard was identified previously by TDEC as a possible an old drum storage area. It reportedly contained storage drums but also was known as a scrap storage yard. At the time of the visual site inspection, the yard contained areas defined by construction and industrial material, such as discarded batteries, abandoned transformers, scrap lead and metal pieces, and lumber.

Surface soil samples were collected at this site in October 2000. The Army found PCB, **benzo(a)anthracene**, and PAH concentrations, but all except PCBs were below preliminary remediation goals.

Proposed Plan

The Army recommends a RCRA facility investigation or an interim soil and debris removal action due to the total PCB concentrations greater than the Army/TDEC preliminary remediation goals. While one sample contained benzo(a)anthracene at a concentration greater than the EPA preliminary remediation goal, the total PAH concentrations are less than the Army/TDEC preliminary remediation goal, indicating no further action is warranted for PAHs at this location.

3.4.22 Eastern Magazine Area

The Eastern Magazine Area site consists of the easternmost of the two magazine areas located in the eastern half of the installation. The site contains 100 Corbetta-type magazines for storage of completed TNT product. Explosives no longer are stored at VAAP.

The Army performed a focused site investigation in January 1999. Results indicated no contamination is present. The Army reported these results to regulatory agencies in a report of findings which requested no further action for this site.

Additional sampling has been conducted by TDEC and will be included in the decision document for this site.

Proposed Plan

The Army anticipates conducting no further action pending EPA and TDEC concurrence.

3.4.23 Warehouse Area, including Pesticide Storage

The Pesticide Storage site is a pesticide storage building that was demolished in 1996.

The Army conducted a focused site investigation in 1999. Results indicated that no contamination was present.

Proposed Plan

The Army anticipates no further action is required, pending approval from EPA and TDEC of the Army's report.

3.4.24 Industrial Surface Water Pollution Control Facility

The Industrial Surface Water Pollution Control Facility site consists of the drainage ditches, equalization ponds, and related facilities that drain some of the major suspected contamination source areas. These areas include the Old Acid Area, CFI Lease Area, facilities in the TNT Manufacturing Valley, and New Acid Area into Waconda Bay, north of VAAP. The Army believes the drainage system may be acting as a significant contamination migration pathway for surface water contamination and sediments deposited in the ditches and ponds, and may also serve as a contamination source to the groundwater.

Proposed Plan

The Army will address contamination at this site with activities conducted for the Old TNT Area (AOC #3), New TNT Area (AOC #4), and Redwater Treatment Plant Area (SWMU #8). This site is considered response complete in the Defense Site Environmental Restoration Tracking System.

3.5 Status of Environmental Cleanup and Upcoming Activities

While how many? IRP sites have been restored and closed or approved by the EPA for "no further action," cleanup activities or monitoring continue at the how many? other sites. Appendix D lists the current status of each of the IRP sites. Table 5-1 in Section 5.4 shows how public participation activities relate to milestones in VAAP's cleanup.

What command? has management responsibility for all government-owned, government-operated facilities in the Army inventory. As caretaker of how many? plants located across the United States, what command is in charge of cleanup, environmental compliance, pollution prevention activities, facilities management, and divestiture of the facilities. Eventually, the Army will divest itself of these plants, including VAAP, at the direction of the U.S. Congress. The Army usually accomplishes this by transferring, leasing, or selling a plant. Already, VAAP has transferred 940 acres of 1,033 acres already approved by Congress for transfer to Hamilton County and the City of Chattanooga. This site, currently under development, is called the Enterprise South Industrial Park.

4.0 Community Background

This section provides a profile of and demographic information on the affected community surrounding the VAAP environmental site.

4.1 Community Demographics and Profile

Chattanooga is located on the Tennessee River near Moccasin Bend. When Spanish explorer Hernando de Soto passed through this area in 1540 on his route along the Tennessee River to the Mississippi, he discovered a major Indian encampment on both sides of the river. A trading post was established on the Tennessee River's banks 200 years later. Chief John Ross, a descendant of the native Cherokee, established a ferry landing in the early 1800s, and the location grew to a major transportation route with river, road, and rail service.

One of the reasons Chattanooga was an important battleground during the Civil War was its railroad system that connected the American north to its southern regions. Following the war, Chattanooga built a strong industrial base supported by inexpensive and readily available low-grade iron ore in the area. A number of foundries and related manufacturing industries grew here. In the 1930s, Chattanooga was known as the "Dynamo of Dixie" and by 1950 had the highest number of manufacturing employees per capita of any city in the U.S.

Chattanooga was once home to Adolph Ochs, founder of the New York Times, and the birthplace of Coca-Cola bottling, Moon Pies, and Krystal hamburgers. Today, the city is centrally located in relation to other major population centers of the southeast, being within 150 miles of Knoxville and Nashville, Tennessee; Birmingham, Alabama; and Atlanta, Georgia. Sitting on the border of Tennessee, immediately north of Georgia, Chattanooga is the junction of Interstate Highways 24, 59, and 75 as well as a center for three port terminals. Figure 1-1 in the first section of this document shows the relationship of Chattanooga to some of these landmarks.

4.1.1 Description of the Community Adjacent to VAAP

As described in section 3.1, the area immediately surrounding the VAAP facility is characterized by residential areas, light industry, and timberland. A development of several hundred homes located to the north of the facility is the focus area for potential off-site residential exposure to site-related constituents. The groundwater in this residential area is downgradient of the VAAP facility.

Just beyond the northern boundary of the VAAP facility is West Waconda Bay, an extension of Lake Chickamauga in the Tennessee River. The State of Tennessee classifies this water body for all uses including domestic water supply, support of fish and aquatic life, and for recreational purposes. Chickamauga Lake is a major recreational area in southeastern Tennessee, with fishing, boating, camping, and picnic facilities at state and county parks located near VAAP.

4.1.2 County and City Demographics

Population

The Chamber of Commerce reports 2001 population statistics for Hamilton County and Chattanooga as 309,600 and 153,000, respectively. Of those living within the Chattanooga **metropolitan statistical area** (MSA), roughly 83 percent are white and 14 percent are black. Fewer than two percent each are Asian Pacific Islander or other ethnic background. Both median and average ages are around 38 years. The percentage of population growth for the Chattanooga MSA between 1990 and 2001 was 10 percent.

Almost 24 percent of Chattanoogans are under 17. Around 62 percent are 18 to 64 years of age. Of those who are 25 years and older, almost 69 percent have a high school diploma or higher; 40 percent have some college degree; 16 percent have a four-year or higher college degree.

Employment

The services sector within the Chattanooga MSA employs 37 percent of those working, and the retailers employ 19 percent. The manufacturers provide jobs for 17 percent of those working, with other sectors employing the remaining seven percent of the workers. Table 4-1 shows the top 20 employers in Chattanooga.

Table 4-1

Top 20 Largest Employers in the Chattanooga Area

Top 10 Non-Manufacturers

Bi-Lo, Inc.
Blue Cross & Blue Shield of Tennessee
CIGNA HealthCare
City of Chattanooga
Columbia/HCA-Chattanooga
Erlanger Health System
Hamilton County Dept. of Education
Memorial Hospital
Provident Companies, Inc.
Tennessee Valley Authority

Top 10 Manufacturers

Covenant Transport, Inc.
Dixie Group, Inc.
DuPont Company
McKee Foods Corporation
North American Royalties
Olan Mills, Inc.
Roper Corporation
Seaboard Farms
Shaw Industries
Synthetic Industries

Source: City of Chattanooga, Tennessee, Department of Finance & Administration Comprehensive Annual Budget Report Fiscal Year 1999-2000.

Housing and Income Levels

Home ownership is high among Hamilton County residents, with almost 66 percent reporting in the 2000 census that they owned their homes. Statewide, 70 percent of residents own their homes.

In 1999 those living in Hamilton County had per capita personal incomes of almost $30,000. Ranked fourth in the state, Hamilton Countians had a per capita income 16 percent higher than Tennesseeans as a whole. This per capita income is more than double the per capita personal income reported for those living in Hamilton County in 1989, when it was $13,600. The latest census data place Tennessee per capita family income at $19,400. Data breakdowns on income from the 2000 census are not yet available for most counties and cities.

The Chamber of Commerce separated median incomes by zip codes; however, it is unknown which census the income data is based on. In the zip code for the VAAP site and eastern neighborhoods, median income is estimated at $52,000. For zip code 37341, the Harrison area on the north of VAAP, median

income is $57,700. Neighborhoods to the west of VAAP in the 37416 zip code have median incomes of $46,000, and median incomes in southern neighborhoods in the Tyner/East Brainerd area are $52,500. A report by Synergos Technologies estimates 1990 median household income for Chattanooga as a whole to have been $22,197. The latest census data place Tennessee median family income at $44,200. County and city breakdowns for median personal and family incomes based on the 2000 census are not yet available.

4.1.3 County and City Government

A nine-member county commission governs Hamilton County, and each commissioner is elected within an individual district to represent that district. There is a county executive who is elected at large and is not a member of the commission.

The city of Chattanooga has a mayor/council form of government, with nine city council members elected from individual districts. Council members elect a chair and vice-chair annually in April. The mayor is elected separately from the council and is not a council member. The mayor is the City's chief executive officer and oversees operation of all city departments.

4.2 History of Community Relations for VAAP

4.2.1 Health Concerns

Health concerns in the communities surrounding VAAP predate the Army's environmental cleanup program there. In the mid-1960s to early '70s, when the plant was operating to support the Vietnam War effort, community members were filing lawsuits for both health effects and potential property devaluation. Even as the Army and its contractors over the years made pollution control improvements at the plant, according to newspaper reports, angry crowds attended public meetings, and thousands signed petitions protesting the ongoing air and water releases.

After EPA issued its administrative order in early 2001 to expedite cleanup at VAAP, it asked the Agency for Toxic Substances and Disease Registry (ATSDR) to conduct a health assessment on possible health effects from contamination at VAAP. ATSDR held an open house in June, inviting community members and former workers to attend and share concerns they may have about the site.

Around 20 people attended the meeting, and many more registered comments by phone and mail. They asked about possible air emissions and contaminated water coming from the site and how they might affect them and their families. They asked specific questions about possible relationships between the chemicals produced at the facility and respiratory problems, brain tumors, and auto-immune diseases as well as how releases may have affected the local environment. One person told ATSDR that information about operations and releases were kept secret from the community, and others said they felt that decisions about future operations at the site are being made without regard to the community's safety or health.

The agency also looked at available data from an off-site survey of 100 wells sampled near VAAP as well as other health surveys and reports. A representative from TDEC reported in late 2001 that only four of the 100 residential wells sampled had trace amounts of explosives or chemicals from the plant and that those concentrations were at low levels and below risk thresholds. Everyone with a well uses municipal drinking water supplies.

ATSDR issued an interim report in September 2001, saying that the agency to date has found no current exposure route that would present a harmful health effect from groundwater coming from the site. It did, however, identify the issues raised by community members (cited above and requiring additional information). ATSDR will issue a final public health assessment, and in the interim, it will produce periodic updates and analyses of data as they become available.

4.2.2 Restoration Advisory Board (RAB)

The Army solicited interest in forming a **Restoration Advisory Board (RAB)** in September 1997. The public petitioned to form a RAB, and one was established in February 1998. Currently, there are 17 members, with representatives from the Army, TDEC, EPA, and local citizens. The meetings are conducted by a community co-chair with assistance from the government co-chair, a representative of VAAP's management division.

The RAB meets bimonthly, and past activities have included an installation tour, updates from various agencies (General Services Administration (GSA), U.S. Army Corps of Engineers, IT Corporation (subcontractor), the Chattanooga/Hamilton County Regional Planning Agency, and ATSDR).

Members receive presentations about ongoing environmental activities at VAAP and advance notice of release of reports that detail environmental activities. The Army consults with members about proposed projects and considers their comments before final decisions are made.

All RAB meetings are open to the public and announced through the media in advance of each meeting. A list of these media is in Appendix F.

4.2.3 Concerns Related During Past Community Interviews

1989 VAAP Public Involvement and Response Plan

A community relations plan, based on interviews conducted in 1988, documented few concerns about the environmental cleanup program at VAAP.

At the time community interviews were conducted in 1988 (and following shutdown of operations at the plant), many of the nearby residents interviewed had little knowledge of VAAP activities. This lack of knowledge did not reflect previous community concerns over VAAP industrial releases that highlighted the '60s and '70s or the economic benefits of over 30 years of operation. The residents seemed to have forgotten or never knew about the plant's benefits to the

community or about the operations conducted there. At the time of the interviews, most of the facility was not accessible by the public.

Even more than a decade ago, the greatest concern expressed by those interviewed was that VAAP property be put to community use. Interviewees mentioned both industrial and recreational uses for the facility.

There was little awareness in 1989 of the environmental program. Once informed of the investigations being conducted, however, most interviewed said they wanted the facility cleaned up as completely as possible so that the land would be safe for future public use.

4.3 Issues of Importance to the Community

4.3.1 Description of the Interview Process

This public participation plan is based on phone interviews conducted in March and April 2002 by a community relations specialist from IT Corporation, an environmental and community relations subcontractor working for the U.S. Army Corps of Engineers, Mobile District. Nineteen individuals were interviewed. The types of organizations or groups they represent are identified in this section. Some individuals represented more than one organization or community group. It also should be noted that some respondents did not answer all questions, and some gave more than one response to a question. Therefore, the numbers associated with responses for each question will not always equal the total number of respondents.

While the interviews represent comments from a cross-section of community interests, the views expressed by the interviewees should not be construed as formal statements for their respective organizations or constituencies. Information presented in this section is a summary of responses. Appendix G lists all questions with tabulated responses. All interviews are kept confidential, and names are not attributed to specific statements.

Interviewed were members or representatives of the following types of organizations or community groups:

ATSDR (1)
City Council (1)
Economic development (3)
Greenway Alliance (1)
League of Women Voters (1)
Local government agency (3)
Media (1)
Real estate development (3)
Restoration Advisory Board (3)
Former or current resident near VAAP (4)
School (1)
State regulatory agency (1)

4.3.2 Current Community Concerns

Clarify Roles and Responsibilities of Different Agencies Contributing to the VAAP Site Cleanup

Only one person interviewed called attention to a potentially major issue that relates to the roles and responsibilities of the different agencies contributing to the cleanup. It is given special mention here because of the potential it has to affect the cleanup in a public and political arena.

An unexpected response by a public official to the interview question "Do you feel that public concerns are addressed by the Army in the cleanup process?" highlights confusion over what exactly the Volunteer site is. This public official said he did not know that the Army was involved in any way in the cleanup at Volunteer. After a few more questions, the interviewer came to realize that this public official thinks the "Volunteer site" is only the 940-acre Enterprise South Industrial Park section that the Army sold to the city and county in 2000. While a positive testament to those in the community who have worked long and hard to procure and develop the site, such identification of the "Volunteer site" may pose the same confusion for other members of the public about the Army's role in a cleanup at "Volunteer."

A quick review of newspaper articles about VAAP appearing in the last three years alone reveals that much of the public discussion has centered around obtaining and developing the 940-acre site which in April 2002 received the name, "Enterprise South Industrial Park." Prior to that time, the newspaper and others could only refer to it as "Volunteer Army Ammunition Plant," even though most references were about the 940-acre portion of the facility only. The importance of this portion of the site also is evidenced by other newspaper articles reporting many running for public office in recent years who made successful procurement and development of the site a part of their campaign platforms.

Now that the 940-acre portion has an official name that does not include the word "Volunteer," the public over time may cease to confuse the two distinct portions of the facility. Until that time, however, the Army will have a continuing challenge to differentiate where and under whose auspices its cleanup is being conducted.

Explain the Cleanup Process and How It Affects Setting Priorities and Conducting the Cleanup Work

Those community members who are involved either in marketing or helping develop the new city and county 940-acre Enterprise South Industrial Park highlighted a perception problem that is often common to any cleanup project. This small and vocal group of private and public developers and government representatives may continue to contribute pressure on the Army and its cleanup activities based on their perception of how the Army and others involved in the cleanup are handling their perceived responsibilities.

Prior to the EPA's administrative corrective action order in 2001, the state through TDEC was responsible for oversight of the Army's cleanup. Also, because the site was not named to the National Priorities List–which automatically makes the site a CERCLA cleanup site–there was confusion over what regulatory process the cleanup should be conducted under. Some sites were being cleaned up under a CERLA-like process under the Army's Installation Restoration Program, others under other federal and state regulations. Further complicating regulatory authority issues were the different regulations guiding cleanups at active and inactive federal facilities and facilities scheduled for transfer to public use. Once the Army decided in 1997 that

the facility was excess to its needs and Congress passed legislation allowing transfer of a portion of the property, different cleanup standards applied.

For those within the community who saw these 6,000+ acres in the county as prime property for business and/or recreational development, the frustration over the role the many federal agencies must play in both the cleanup and eventual transfer of property lasted a long time. Even within the Army, there were departments charged with maintaining the facility for eventual use in the event of war, departments charged with cleaning up the facility from past operational activities and releases, departments being approached about making the facility or portions of the facility available for public use. Added to these Army entities were TDEC and EPA, both agencies with different approaches and ideas about the cleanup of the facility, and the General Services Administration (GSA), the federal agency responsible for ultimate disposal of federal property.

Compounding the frustration over "who's in charge," is the usual length of time required for an environmental cleanup which, depending on the type, amount, and level of contamination, can take many years under the best of conditions and steady funding.

Most of those interviewed from the business development community–whether private or public–expressed the frustration described above over the length of time it has taken to procure the 940-acre Enterprise South Industrial Park section. Many also are critical of the Army and other agencies over the priorities that have been set for the cleanup of remaining portions of the facility. More detail about these concerns is quantified in Appendix G of this document, but the concerns expressed by this group are presented briefly below.

Some accused the EPA's administrative order as taking the cleanup "backwards" and being "obstructionist," causing a delay in the release of an additional 200 acres located near the Board of Education and adding $8 million and two years to the cleanup process. One person accused the different agencies of bickering over control of the cleanup, causing further delay. Others questioned who set and how priorities were determined for the cleanup of individual sites within the facility. Many of those in this group believe that individual sites that could easily be cleaned up and released for transfer are being ignored or unnecessarily delayed while sites that may take years to clean up are receiving top priority for action and funding. Even among individuals interviewed outside this group, such as community residents and representatives of environmental groups, is a sense of impatience with how long the cleanup is taking.

The challenge to the Army, as well as other participating agencies, will be twofold: explaining the cleanup process in meaningful ways so that people can understand how priorities are set and actions decided as well as demonstrating clear lines of authority for those priorities and cleanup activities.

Provide Concise and Ongoing Communication about the VAAP Cleanup

In recent years, media attention paid to the Army's cleanup program at VAAP has centered primarily on how it affects transfer of property to public use. Although the local newspaper environmental reporter seems to have covered activities at VAAP very thoroughly and accurately, in most people's minds the cleanup seems to be related to eventual transfer. No one

specifically mentioned health or other issues as being a primary concern with the cleanup, although as might be expected, two individuals with strong environmental interests wanted eventual facility transfer to result in recreational or passive use. For the residents interviewed who live around Waconda Bay, they were concerned about runoff from the facility affecting water quality and recreational use there.

What we want to know. There was not strong interest in being involved in cleanup activities at VAAP, but most wanted to be kept informed of ongoing status, priorities, and planned activities on a frequent, but not too frequent, basis--most saying quarterly would be frequent enough. As many as a third of the responses to one question or another expressed confidence that the cleanup will be conducted appropriately.

How we want to receive information. There was consensus that information should not be too technical and should be concise. Those interviewed seemed to be busy people; they were more likely to want to read about the cleanup in the newspaper--something most said they read every day anyway.

It should be noted that the *Chattanooga Times and Free Press* for several years had an environmental reporter who paid careful attention to activities and developments at VAAP. Those mentioning coverage by the Times and Free Press generally gave high marks to its coverage of VAAP. While the newspaper will likely assign a new reporter to cover VAAP, there is no guarantee that this reporter will have the same understanding and background the last reporter brought to coverage, potentially making disseminating information through this medium less satisfying and dependable than before.

Following dissemination of information through the newspaper, about a quarter of those interviewed preferred to receive information about the cleanup by mail or e-mail. An almost equal number to those preferring mail or e-mail communication wanted to be able to access information at their convenience, using a special web site where information about the cleanup would be posted, including site closure notices.

The challenge to the Army will be to provide information in simple terms and few words that explains the basic environmental process while simultaneously conveying activity status and schedules for a large number of sites with varying levels of environmental complexity.

5.0 Public Participation Program

5.1 Purpose of the Public Participation Program

As mentioned earlier, the public participation program is designed to provide opportunities for the community to work with the Army while cleanup actions continue to be implemented at the VAAP site. The public involvement program will focus on ensuring two-way communication between the Army and the community and keeping the public informed of technical progress at the VAAP site.

5.2 Goals of the Public Participation Program

The public participation program for the VAAP site will:

- Provide local officials, residents, and the media with accurate, timely, and understandable information.
- Provide for an open dialogue between the Army and the public concerning site-related environmental cleanup issues.
- Provide avenues for public participation in the decision-making process related to environmental cleanup of the site.
- Notify local officials, residents, and businesses about fieldwork being planned in their community or near their property before work begins.
- Seek to increase the community's level of understanding of the cleanup process, the roles of the various government agencies involved, the technologies used in cleaning up the environment, and the site cleanup plans.
- Involve the community in site-related activities whenever possible.

5.3 Public Participation Activities

The specific methods that the Army will use to inform and involve the public in the cleanup process are described below.

5.3.1 Provide a Central Point of Contact

As a first step in providing the community with opportunities to comment and ask questions throughout the cleanup process, the Army has designated a contact person for the community who will take telephone calls and respond to inquiries from the public:

Mr. Robert Elmore
Volunteer Army Ammunition Plant
6703 Bonny Oaks Drive
Building 232
Chattanooga, Tennessee 37421

Phone: (423) 893-6803
Fax: (423) 893-9726
E-mail: Relmore@vol.com

5.3.2 Locate the Information Repository in a Central Location and Maintain Both the Repository and the Administrative Record File

To address concerns and provide more in-depth technical information about the VAAP site, the Army participates in information repositories at central, public locations. The information repository contains the key technical documents produced for the site, a copy of this public participation plan, local news articles, and all public information (for example, fact sheets and newsletters) that pertain to environmental cleanup activity at the site. As new documents become available, they are added to the repository. The administrative record file also is kept at VAAP, Building 232. The administrative record file contains all the documents and correspondence that pertain to the decision-making process at the site. For more information about the location and hours of the repositories, see Appendix C.

5.3.3 Create, Maintain, and Update a Site Mailing List

To address the community's request to make more information available to the public on a regular basis, the Army has created, maintained, and updated a mailing list of more than 100 interested members of the community. The Army sends out information periodically to individuals on the list.

It also is noted that the Hamilton County Real Property Office and ATSDR have separate mailing lists for public meetings about VAAP that they have hosted or participated in. These lists may be available to the Army if a notice or publication requires wider distribution.

5.3.4 Disseminate Fact Sheets and Newsletters at Key Project Milestones or to Address Specific Information Needs of the Community

To address the community's need for timely, accurate, and understandable information about the VAAP site, the cleanup process, and opportunities for community involvement, the Army prepares and distributes fact sheets or news articles at key project milestones or to address specific information needs of the community. The Army also has issued fact sheets when fieldwork begins, when the corrective measures study and statement of basis are ready for public review, and whenever needed to ensure accurate and timely information for the community.

Since confusion over what constitutes the "Volunteer site" has been identified from those interviewed for this plan, the Army will make special attempts in publications to differentiate activities conducted at the Enterprise South Industrial Park site and VAAP.

5.3.5 Disseminate Information Through the Local Media

Prior to RAB meetings and other significant milestones in the cleanup process at VAAP, the Army sends news releases to local news media. The Army provides Chattanooga news media with up-to-date information on site investigation and cleanup activities as well as upcoming RAB meetings. Community members identified the Chattanooga Times and Free Press as the most widely read publication. Important events at RAB meetings, such as the announcement of field investigations or changes in use of technologies, also are announced in news releases. Each release is distributed to news media throughout Chattanooga.

As previously noted, confusion over what constitutes the "Volunteer site" has been identified from those interviewed for this plan. While the Army has no control over how news media will cover environmental activities at VAAP, Army representatives will make special efforts in news releases and interviews to differentiate activities conducted at the Enterprise South Industrial Park site and VAAP.

To address the concerns of local officials, the Army, whenever possible, releases information to officials before releasing the information to the media and the public. In their role as information sources for the community, it is important that local officials be provided with information prior to its release to the public or the media, if possible, so that they can answer questions from constituents or direct those questions to the appropriate person at the Army. Appendix F lists public officials as well as local media that receive information about VAAP site activities.

5.3.6 Hold Comment Periods and Public Meetings

Opportunities for public participation in the decision-making process at a federal cleanup site are built into the RCRA process. The Army seeks to enhance these opportunities by encouraging the public to participate in the comment period on technical documents and cleanup plans for the VAAP Site. The Army takes public comments into account in selecting and conducting cleanup actions, and ultimately, the final cleanup remedy proposed for individual sites.

As described earlier, at specific decision-making points in the cleanup process, the Army is required by RCRA to hold public comment periods. During the comment period (anywhere from 30 to 90 days), community members have an opportunity to voice their support for or their concerns about activities planned for the site, either orally at a public meeting or in writing. The Army is required under RCRA to consider public comments when preparing a decision document.

Actions described in the corrective measures study and statement of basis may be modified in the decision document to address the concerns of community members or to provide explanations for

leaving actions unchanged. Section 1.5 lists the key contacts who receive these comments, and Appendix H lists possible locations where meetings may be held.

5.3.7 Support the Established RAB as a Conduit for Community Feedback and Information Dissemination

Because the RAB has a history of providing the community with a consistent forum for expressing opinions and learning about the VAAP cleanup, the Army is committed to ongoing support for this organization. Currently, the Army distributes minutes and RAB meeting announcements to a mailing list and to those who request them. The Army always is in attendance as government co-chair at RAB meetings and often to present updates and new information about activities.

Special efforts will be made to make presentations, handouts, and posters easy to understand. The RAB often invites subcontractors who are working at the site, as well as groups from the community that are interested in the cleanup, to update the members.

5.3.8 Facility Tours

Tours of the site are a popular venue for helping community members better understand the cleanup at VAAP. Often these tours have been arranged through the business organization overseeing development of the 940 acres purchased by the City of Chattanooga and Hamilton County. (These 940 acres are now called the Enterprise South Industrial Park.) Tours can also be arranged, however, with plenty of advance notice to the Army's contact at VAAP, Bob Elmore.

5.3.9 Informal Information Sessions and Other Personal Contact

The Army will hold one-on-one or small group meetings with residents, local officials, and other interested groups at locations convenient to all parties, as needed. The Army also will hold information sessions as are considered necessary to keep the community informed. The need for additional sessions will be determined through periodic conversations with community representatives and upon request. To contact the VAAP representative, e-mail Bob Elmore at: Relmore@vol.com.

5.3.10 Response to Comments

When public comments--either written or oral--are received during comment periods, a response to comments is prepared by the Army and regulatory authorities, if necessary. These summaries then are attached to the decision document, detailing the cleanup decision and the Army's consideration of community concerns.

5.3.11 Web Site

As people have become more accustomed to retrieving information from the Internet, the Army plans to develop a web site for information specifically about VAAP. This information will be updated periodically and will include at a minimum information about: the history of VAAP, addresses and phone numbers of contact people, brief site descriptions and work progress at individual sites, RAB minutes, and announcements about comment periods, site closures, and RAB meetings.

5.3.12 Updates of the Public Participation Plan

At specific points during the RCRA cleanup process, such as when there are significant changes in site conditions or cleanup activities, the Army evaluates the need to update the public participation plan. This assures that the Army continues to address community concerns and information needs as they may change over time or when events may create new or expanded interest.

5.4 Public Participation Activities Schedule

The public participation activities that will be conducted for the VAAP site are listed in Table 5-1 with the corresponding technical milestones. Activities are identified as either required under RCRA or as additional proposed activities the Army believes can improve communication between the Army and the public. Note that under RCRA Section 3008(h), no specific public participation activities are required; however, some recommendations are strongly suggested by EPA and are treated by the Army as "required."

Table 5-1

Relationship of Public Participation Activities to Installation Restoration Program Technical Milestones for Environmental Sites at Volunteer Army Ammunition Plant, Chattanooga, Tennessee

Public Participation Activity Goals	Technical Milestones						
	RCRA facility assessment (RFA) (Initial site assessment	RCRA facility investigation (RFI) (Site characterization)	Interim actions (May occur at any time during the process	Corrective measures study (CMS) (Evaluation of remedial alternatives)	Preferred remedy	Decision document (Remedy selection)	Corrective measures implementation (CMI)
Draft or existing public participation plan (conduct community interviews as needed)		+					
Fact sheets, news releases, summary documents	+	+	+				+
Identify contact person							
Information repositories and administrative record file		---------- Ongoing (information included as available) ----------					
Mailing list	---------- Ongoing and updated regularly ----------						
Presentation, informal discussions, workshops	+	+	+				+
	---------- Periodic as requested ----------						
Public comment periods							
Public meetings						+	
Public notices							
Response to comments							
Restoration Advisory Board	---------- Ongoing (meets quarterly or as needed) ----------						

"Requried."

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APPENDIX A

ABBREVIATIONS USED IN THE PUBLIC PARTICIPATION PLAN

Appendix A

Abbreviations Used in the Public Participation Plan Update for Volunteer Army Ammunition Plant, Chattanooga, Tennessee

AOC	area of concern
ATSDR	Agency for Toxic Substances and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIL	Canadian Industries Limited
CMI (C)	corrective measures implementation (construction)
CMI (O)	corrective measures implementation (operation)
CMS	corrective measures study
CS	confirmation study
DERP	Defense Environmental Response Program
DOD	U.S. Department of Defense
EPA	U.S. Environmental Protection Agency
FS	feasibility study
GSA	General Services Administration
IRP	Installation Restoration Program
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
PA	preliminary assessment
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RA	remedial action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	remedial design
RFA	RCRA facility assessment
RFI	RCRA facility investigation
RI	remedial investigation
ROD	Record of Decision

Appendix A

Abbreviations Used (Continued)

SARA	Superfund Amendments and Reauthorization Act
SI	site inspection
SVOC	semi-volatile organic compound
SWMU	solid waste management unit
TDEC	Tennessee Department of Environment and Conservation
TNT	trinititrotoluene
TWRA	Tennessee Wildlife Resources Agency
VAAP	Volunteer Army Ammunition Plant
VOC	volatile organic compound

APPENDIX B

TERMS USED IN THE PUBLIC PARTICIPATION PLAN

Appendix B
Terms Used in the Public Participation Plan Update for Volunteer Army Ammunition Plant, Chattanooga, Tennessee

administrative order
A legal agreement between the **U.S. Environmental Protection Agency (EPA)** and the Army in which the Army agrees to perform or pay the cost of a site cleanup. The agreement describes actions to be taken at a site.

administrative record
A file that is maintained--and contains all the information used--by the lead agency to make its decision on the selection of a response action, or cleanup activity, under the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**. This file is to be available for public review and a copy established at or near the site, usually at the information repository. This file is to be available for public review and a copy established at or near the site, usually at the information repository. For the Volunteer Army Ammunition Plant (VAAP) site, the administrative record file currently is located at the environmental office in Building 232.

area of concern (AOC)
A discrete area of contamination or suspected contamination that is in the **RCRA facility investigation** phase and that has not been entered into the Department of Defense's Restoration Management Information System.

Agency for Toxic Substances and Disease Registry (ATSDR)
A federal public agency located in Atlanta, Georgia. It is part of the Public Health Service with the U.S. Department of Health and Human Services. ATSDR's mission is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment.

aquifer
An underground formation of soil, sand, or gravel that can store and supply groundwater to wells or springs.

benzo(a)anthracene
A compound known as a **polycyclic aromatic hydrocarbon (PAH)**. PAHs are products of incomplete combustion of fossil fuels or other organic matter. PAHs can occur both in nature and can come from manufacturing. This particular compound is somewhat toxic, but it also is not very soluble in water. Therefore, it is not usually a groundwater contaminant (although it could be), and people are not often exposed to the compound from drinking groundwater. If present in soil, it is relatively stable and does not easily leach into groundwater. If a person drinks or

ingests a significant amount or over a long period of time, however, exposure to this compound may cause health problems. This compound is a probable human carcinogen.

benzo(a)pyrene

A compound known as a **polycyclic aromatic hydrocarbon (PAH)**. PAHs are products of incomplete combustion of fossil fuels or other organic matter. PAHs can occur both in nature and can come from manufacturing. This specific compound is moderately toxic, but it also is not very soluble in water. Therefore, it is not usually a groundwater contaminant (although it could be) and doesn't tend to result in exposures from drinking groundwater. If present in soil, it is relatively stable and does not easily leach into groundwater. If a person drinks or ingests a significant amount or over a long period of time, however, exposure to this compound may cause health problems. This compound is a probable human carcinogen. Benzo(a)pyrene is 10 times more toxic than the previously defined **benzo[a]anthracene**.

bioremediation

The use of living organisms to clean up oil spills or remove other pollutants from soil or groundwater.

Canadian Industries Limited (CIL)

The company that manufactured the process lines used in the New TNT Area.

comment period

A time during which the public is invited to review and comment on various documents and the Army's proposed actions.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

A federal law passed in 1980 and modified in 1986 by the **Superfund Amendments and Reauthorization Act (SARA)**. The acts created a special tax that goes into a trust fund, commonly known as **Superfund**, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, EPA can pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work. EPA also can take legal action to force parties responsible for site contamination to clean up the site or pay back the federal government for the cost of the cleanup.

corrective measures study (CMS)

Evaluates the alternatives for cleanup technology in terms of the specific site characteristics such as contaminants, soil conditions, and hydrogeologic conditions in a RCRA corrective action cleanup. Equivalent to a CERCLA feasibility study.

corrective measures implementation (construction) (CMI(C))
The RCRA corrective action phase during which the selected cleanup technology is constructed, installed, and implemented. Equivalent to the construction portion of a CERCLA remedial action.

corrective measures implementation (operation) (CMI(O))
The RCRA corrective action phase during which the selected cleanup technology is operated until confirmatory sampling and analysis indicate that cleanup levels have been reached. Equivalent to a CERCLA remedial action.

decision document
Demonstrates that the response action chosen is consistent with and meets the requirements of CERCLA and NCP and documents the Army's decisions regarding its response action selection. It is equivalent to a **Record of Decision** for non-**NPL** sites.

Defense Environmental Response Program (DERP)
The Department of Defense program, mandated in SARA Section 211, which includes the **Installation Restoration Program (IRP)** as a component.

Defense Site Environmental Restoration Tracking System (DSERTS)
A computer-based system used to track environmental restoration activities at active installations. The system is used to collect and maintain information about environmental remediation and provide reports that detail the information at the Department of Defense's (DOD) Component level. Data gathered by DSERTS will be submitted to the Restoration Management Information System for DOD processing and will be used as the principal source of information for each DOD component in the Annual Report to Congress.

feasibility study (FS)
The second part of a two-part study called a **remedial investigation**/feasibility study. The feasibility study involves identifying and evaluating the most appropriate technical approaches for addressing contamination problems at a **Superfund** site. The alternatives are evaluated for their effectiveness in protecting human health and the environment.

government-owned, contractor-operated (GOCO)
Industrial plant facilities that are owned by the government but are operated by a contractor. The VAAP site is an inactive GOCO site that is considered by the Army to be excess.

groundwater
The supply of fresh water found beneath the earth's surface (usually in **aquifers**) which is often used for supplying wells and springs.

hazard ranking system (HRS)
A scoring system used to evaluate potential relative risks to public health and the environment from releases or threatened releases of hazardous substances. This score is the primary factor used to decide if a hazardous waste site should be placed on the **NPL**.

information repository
A file containing current information, technical reports, and reference documents regarding a cleanup site. The information repository is usually located in a public building that is convenient for local residents, such as a library, public school, or city hall. For the VAAP site, the administrative record file currently is located at the environmental office in Building 232, and the information repository is located in the main branch of the Chattanooga-Hamilton County Bicentennial Library.

Installation Restoration Program (IRP)
The fund managed by the Department of Defense, enabling the Army to investigate and address former hazardous waste sites at its facilities.

interim action
A response action under **RCRA** to mitigate fire and safety hazards and to prevent further migration of the contaminant(s). It may be identified and implemented at any time during the investigation or design phase. It is limited in scope and addresses only areas or media for which a final remedy will be developed by the **RCRA facility investigation** and **corrective measures study** process. An interim action should be consistent with the final remedy for a site.

karst
A geologic formation of irregular limestone deposits with sinks, underground streams, and caverns.

metropolitan statistical area (MSA)
The general concept of a metropolitan area is that of a large population nucleus, together with adjacent communities having a high degree of social and economic integration with that core. Metropolitan areas comprise one or more entire counties, except in New England, where cities and towns are the basic geographic units. The Office of Management and Budget defines metropolitan areas for purposes of collecting, tabulating, and publishing federal data. Metropolitan area definitions result from applying published standards to Census Bureau data.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300)
The major framework regulation for the federal hazardous substances response program. The NCP includes procedures and standards for how **EPA**, other federal agencies, states and private parties respond under **CERCLA** to releases or threats of releases of hazardous substances and

under the Clean Water Act section 311, as amended by the Oil Pollution Act of 1990, to discharges of oil.

National Priorities List (NPL)
EPA's list of the most serious uncontrolled or abandoned hazardous wastes sites identified for possible long-term remedial response.

polycyclic aromatic hydrocarbon (PAH)
Hydrocarbons with multiple benzene rings. PAHs are typical components of asphalt, fuel, oils, and greases.

polychlorinated biphenyl (PCB)
A group of toxic chemicals used for a variety of purposes including electrical applications, carbonless copy paper, adhesives, hydraulic fluids, and caulking compounds. PCBs also are produced in certain combustion processes. PCBs are extremely persistent in the environment because they are very stable, nonreactive, and highly heat resistant. Burning them produces even more toxins. Chronic exposure to PCBs is believed to cause liver damage. It is also known to bioaccumulate in fatty tissues. PCB use and sale were banned in 1979 with the passage of the Toxic Substances Control Act.

plume
A defined area of groundwater contamination believed to have originated from a known source.

preliminary assessment (PA)
The process under **CERCLA** of collecting and reviewing available information about a known or suspected hazardous waste site or release. The **EPA** or states use this information to determine if the site requires further study. If further study is needed, a **site inspection** is undertaken.

preliminary remediation goal (PRG)
Concentration levels set for individual chemicals that: for carcinogens corresponds to a specific cancer risk level of one in one million and for non-carcinogens corresponds to a hazard quotient of one. PRGs are generally selected when applicable or relevant and appropriate requirements are not available.

proposed plan
A public participation requirement of the **Superfund Amendments and Reauthorization Act (SARA)** in which the Air Force summarizes for the public the preferred cleanup strategy, the rationale for the preference, reviews the alternatives presented in the detailed analysis of the **feasibility study**, and presents any waivers to cleanup standards which may be proposed. The proposed plan actively solicits public review and comment on all alternatives under consideration.

public participation plan
The public participation plan outlines specific community involvement activities that will occur during the cleanup at a site. The public participation plan also outlines how the public will be kept informed of work at the site and the ways in which citizens can review and comment on decisions that may affect the final site actions. The public participation plan document is typically placed in the information repository(ies) established for the site.

RCRA facility assessment (RFA)
The initial phase of the cleanup process to determine whether corrective action at a site is needed or to define what additional data must be gathered to make this determination. Equivalent to a **CERCLA preliminary assessment** (PA).

RCRA facility investigation (RFI)
The phase of the cleanup process that determines the extent of hazardous waste contamination. Equivalent to the **CERCLA remedial investigation** (RI).

Record of Decision (ROD)
A document outlining the steps taken to arrive at a final cleanup decision for a hazardous waste site. The record of decision is based on information and technical analysis generated during the **remedial investigation** and **feasibility study** and consideration of public comments and community concerns. All comments received in writing, or expressed orally at a public hearing, during the public comment period are summarized and responded to in a formal manner in a **responsiveness summary** section of the **Record of Decision**.

redwater
TNT-contaminated waste water. The TNT gives a pink to red-colored tint to the water.

remediation or remedial action (RA)
Following the remedial design of the selected cleanup alternative at a **CERCLA** site, the steps that are taken to construct or implement a remedy that will reduce or eliminate risks to human health and the environment posed by a the site.

remedial design (RD)
An engineering phase under **CERCLA** that follows the **Record of Decision** in which technical drawings and specifications are developed for the remedial action at a site.

remedial investigation (RI)
The first part of a two-part investigation under **CERCLA** that is conducted to fully assess the nature and extent of the release, or threat of release, of hazardous substances, pollutants, or

contaminants, and to identify alternatives for remediation. The remedial investigation gathers the necessary data to support the corresponding **feasibility study**.

Resource Conservation and Recovery Act (RCRA)
A federal law that established a regulatory system to track hazardous substances from their generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites. The VAAP site cleanup is being conducted under an administrative order issued under RCRA Section 3008(h).

response to comments
A summary of oral and written public comments received during formal public comment periods on key documents such as the **RCRA facility investigation** and **corrective measures study** reports, and the formal responses to these comments. The responsiveness summary is especially valuable during the **decision document** phase of the **RCRA** cleanup process, when it highlights community concerns for decision-makers.

Restoration Advisory Board (RAB)
An advisory group for the cleanup process made up of members from the public, the Army, and the regulatory agencies. The purpose of a RAB is to gain useful input from stakeholders on cleanup activities and increase the Army's responsiveness to the community's concerns about an environmental restoration. In Chattanooga, the RAB is supported by the Army, **EPA**, and **TDEC**.

risk assessment
An evaluation performed as part of the **remedial investigation** to assess conditions at a **Superfund** site and determine the risk posed to public health and the environment.

semivolatile organic compound (SVOC)
Compounds that do not readily volatilize (evaporate) at standard temperature and pressure. Used synonymously with "base neutral acid" or "extractable compounds."

site inspection (SI)
A technical phase under **CERLCA** that follows a **preliminary assessment** designed to collect more extensive information on a hazardous waste site. The information is used to score the site using the **hazard ranking system** to determine whether a **response action** is needed.

solid waste management unit (SWMU)
Any discernible waste management unit at a facility being cleaned up under **RCRA** from which hazardous constituents might migrate.

statement of basis
A **RCRA** corrective action **decision document** that: identifies the proposed remedy for a corrective action at a facility and explains the reason for the proposal, describes all the remedies that were considered in the **RCRA facility investigation** and **corrective measures study** reports, solicits public comments on the remedies considered, and provides information on how the public can be involved in the remedy selection process.

Superfund
The common name used for the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA**), the federal law which mandates cleanup of former or abandoned hazardous waste sites.

Superfund Amendments and Reauthorization Act (SARA)
Modifications to **CERCLA** enacted on October 17, 1986. SARA also strengthened state involvement in the cleanup process, encouraged the use of treatment technologies and permanent solutions, and subjected federal facilities to the same requirements to which other responsible parties must adhere once they are placed on the Superfund **NPL.**

Tennessee Department of Environment and Conservation (TDEC)
The state agency responsible for environmental protection in Tennessee. TDEC protects public health and the environment by enforcing standards of quality for Tennessee's air, land, and water. TDEC is a partner with **EPA** in overseeing the cleanup at VAAP.

trinitrotoluene (TNT)

U.S. Environmental Protection Agency (EPA)
The United States government agency responsible for administering **CERCLA**--known as **Superfund**--and its amendments, as well as other legislation, such as **RCRA**. The agency has 10 regions, and Region IV, along with **TDEC**, is responsible for overseeing the VAAP cleanup.

vanadium pentoxide
The waste vanadium pentoxide at the site is in the form of a vanadium pentoxide catalyst used in the conversion of sulfur dioxide to sulfur trioxide during the contact process for the production of sulfuric acid. The vanadium pentoxide catalyst is manufactured by combining vanadium pentoxide powder with silica materials to form a paste. The paste is then extruded to form solid cylindrical pellets or other shapes and baked at high temperatures. Spent vanadium pentoxide catalyst pellets were buried at the Vanadium Pentoxide and Asbestos Burial Ground (SWMU #3) at VAAP.

volatile organic compounds (VOCs)

Contain carbon (organic) compounds that evaporate (volatilize) at room temperature. They include light alcohols, acetone, benzene, vinyl chloride, **TNT**, and toluene. These potentially toxic chemicals are used as solvents, degreasers, paints, thinners, and fuels. Because of their volatile nature, they readily evaporate into the air, increasing the potential exposure to humans. Due to their solubility, environmental persistence, and widespread industrial use, they are commonly found in soil and groundwater.

APPENDIX C

LOCATION OF THE ADMINISTRATIVE RECORD FILE AND INFORMATION REPOSITORY

Appendix C

Locations of the Administrative Record File and the Information Repository for Volunteer Army Ammunition Plant, Chattanooga, Tennessee

Volunteer Army Ammunition Plant

Contact: Mr. Robert Elmore
6703 Bonny Oaks Drive
Building 232
Chattanooga, TN 37421
Phone: (423) 893-6803
Fax: (423) 893-9726
E-mail: Relmore@vol.com

The administrative record file is located here. Currently, the library does not have set hours. Call the phone number and leave a message about when you would like to visit. Someone will return your call and verify a time.

Chattanooga–Hamilton County Bicentennial Library

Local History and Genealogy Desk
1001 Broad Street, 3rd Floor
Chattanooga, Tennessee 37402
Phone: (423) 757-5317
Main Number: (423) 757-5310

Hours

Monday-Thursday	9 a.m.-9 p.m.
Friday-Saturday	9 a.m.-6 p.m.
Sunday	2-6 p.m.

The information repository is located here, and several shelves of Volunteer Army Ammunition Plant documents are housed here as well. The library also keeps a file of newspaper articles about Volunteer Army Ammunition Plant that have appeared in local newspapers over the years.

APPENDIX D

STATUS OF ENVIRONMENTAL SITES AT VOLUNTEER ARMY AMMUNITION PLANT

Appendix D

Status of Environmental Sites at Volunteer Army Ammunition Plant

EPA Site Name	EPA Site Designation	Relative Risk Site Evaluation Rating	Contaminants	Media of Concern	Completed IRP Phase	Current IRP Phase	Future IRP Phase
East Acid Area	AOC #1	High	Explosives, PCBs, arsenic, lead, PAHs	Soil, groundwater	Preliminary assessment/site investigation	Resource Conservation and Recovery Act (RCRA) facility investigation	Design/corrective measures implementation
Pistol Ranges	AOC #2	Not evaluated	Lead	Soil	Preliminary assessment/site investigation	Response complete	Response complete
Old TNT Area	AOC #3	High	Total petroleum hydrocarbons, Semivolatile organic compounds (SVOCs)	Soil, groundwater	Preliminary assessment/site investigation	Corrective measures study	Design, corrective measures implementation (construction)
New TNT Area	AOC #4	High	Total petroleum hydrocarbons, SVOCs	Soil, groundwater	Preliminary assessment/site investigation	Corrective measures study	Design, corrective measures implementation (construction)
Surface Water Investigation Area	AOC #5	Not evaluated	Pesticides, metals, explosives, PAHs, PCBs	Surface water	Preliminary assessment/site investigation	RCRA facility investigation/corrective measures study	Design, corrective measures implementation
Sitewide Groundwater Investigation Area	AOC #6	High	Explosives, metals	Groundwater	Preliminary assessment/site investigation	RCRA facility investigation/corrective measures study	Design, corrective measures implementation (construction), corrective measures implementation (operation), long-term monitoring
Old Explosives Magazine Area and Associated Railcar Loading Area	AOC #7	Low	Explosives	Soil	Preliminary assessment/site investigation	Corrective measures study/Interim remedial action	Design, corrective measures implementation (construction)
Environmental Labs	AOC #8	Not evaluated	Metals, VOCs	Soil	Preliminary assessment/site investigation	Response complete	Response complete
Drum Storage	AOC #9	Not evaluated	SVOCs, metals, PAHs	Soil	RCRA facility assessment	Recommended: No further action	
Commander's Garden	AOC #10	Not evaluated	SVOCs, PAHs	Soil	RCRA facility assessment	Recommended: No further action	Response complete
Figure Eight Area	AOC #10b	Not evaluated	Metals, PCBs, PAHs	Soil	RCRA facility assessment	Recommended: RCRA facility investigation or interim measure	Corrective measures study
Industrial Landfill Area	SWMU #1	Medium	PAHs, metals, explosives	Soil, groundwater	Preliminary assessment/site investigation	RCRA facility investigation	Corrective measures study, design, corrective measures implementation (construction)

Appendix D

Status of Environmental Sites at Volunteer Army Ammunition Plant

EPA Site Name	EPA Site Designation	Relative Risk Site Evaluation Rating	Contaminants	Media of Concern	Completed IRP Phase	Current IRP Phase	Future IRP Phase
World War II Landfill Area	SWMU #2	Medium	Lead, explosives	Soil, groundwater	Preliminary assessment/site investigation	RCRA facility investigation	Corrective measures study, design, corrective measures implementation (construction)
Vanadium Pentoxide and Asbestos Burial Ground	SWMU #3	Low	Vanadium	Soil, groundwater	Preliminary assessment/site investigation, interim remedial action, decision document	Response complete	Response complete
World War II Burning Ground	SWMU #4	Medium	Explosives, PAHs, metals	Soil, sediment	Preliminary assessment/site investigation	RCRA facility investigation	Corrective measures study
Redwater Ash Landfill (New Magazine Area)	SWMU #5	Low	Explosives, metals, PAHs	Groundwater, soil	Preliminary assessment/site investigation	Confirmatory sampling	Response complete
New Acid Area	SWMU #6	High	Explosives, metals, PCBs	Soil, groundwater	Preliminary assessment/site investigation	RCRA facility investigation	Corrective measures study
CFI Lease Area	SWMU #7	High	PCBs, arsenic, lead, PAHs	Groundwater, soil, sediment	Preliminary assessment/site investigation	RCRA facility Investigation/ Corrective Measures Study	Design/corrective measures implementation
Redwater Treatment Plant Area	SWMU #8	High	Total petroleum hydrocarbons, SVOCs	Soil, groundwater	Preliminary assessment/site investigation	Corrective measures study	Design, corrective measures implementation (construction)
New Landfill/Burning Ground	SWMU #9	Medium	Explosives	Soil, groundwater	Preliminary assessment/site investigation, interim remedial action, remedial investigation/feasibility study	Corrective measures study	Corrective measures implementation
Salvage Yard		Not evaluated	PCBs, PAHs	Soil	RCRA facility assessment	Recommended: RCRA facility investigation or interim removal action	
Eastern Magazine Area		Not evaluated	Explosives	Soil	Preliminary assessment/site investigation	Response complete	Response complete

Appendix D

Status of Environmental Sites at Volunteer Army Ammunition Plant

EPA Site Name	EPA Site Designation	Relative Risk Site Evaluation Rating	Contaminants	Media of Concern	Completed IRP Phase	Current IRP Phase	Future IRP Phase
Warehouse Area, including Pesticide Storage		Not evaluated	Pesticides	Soil	Preliminary assessment/site investigation	Response complete	Response complete
Industrial Surface Water Pollution Control Facility		Medium	Explosives, metals, PAHs, PCBs	Soil, groundwater	Preliminary assessment/site investigation	Response complete	Response complete

AOC - area of concern.
PAH - polycyclic aromatic hydrocarbon.
PCB - polychlorinated biphenyl.
RCRA - Resource Conservation and Recovery Act.
SVOC - semivolatile organic compound.
SWMU - solid waste management unit

APPENDIX E

CROSS REFERENCE OF SITE NAMES AND DESIGNATIONS

Appendix E

Cross Reference of Site Names and Designations at Volunteer Army Ammunition Plant

EPA Site Name	EPA Site Designation	Other Site Name	Other Site Designation	DSERTS Designation
East Acid Area	AOC #1	East Acid Area		VAAP-01
Pistol Ranges	AOC #2	Pistol Range		VAAP-03
Old TNT Area	AOC #3	TNT Manufacturing Valley		VAAP-32
New TNT Area	AOC #4	TNT Manufacturing Valley		VAAP-32
Surface Water Investigation Area	AOC #5	Surface Water		
Sitewide Groundwater Investigation Area	AOC #6	Groundwater		VAAP-35
Old Explosives Magazine Area and Associated Railcar Loading Area	AOC #7	Western Magazine Area		VAAP-05
Environmental Labs	AOC #8	Environmental Laboratory		VAAP-04
Drum Storage	AOC #9	Barren Area	AOC-1	
Commander's Garden	AOC #10	Barren Area	AOC-6	
Figure Eight Area	AOC #10b	Barren Area	AOC-8	
Industrial Landfill Area	SWMU #1	Industrial Landfill Area		VAAP-20
World War II Landfill Area	SWMU #2	World War II Landfill		VAAP-21
Vanadium Pentoxide and Asbestos Burial Ground	SWMU #3	Vanadium Pentoxide/Asbestos Burial		VAAP-16
World War II Burning Ground	SWMU #4	World War II Burning Ground		VAAP-21
Redwater Ash Landfill (New Magazine Area)	SWMU #5	Magazine Area Redwater Ash Landfill		VAAP-23
New Acid Area	SWMU #6	New Acid Area		VAAP-33
CFI Lease Area	SWMU #7	CFI Lease Area		VAAP-02
Redwater Treatment Plant Area	SWMU #8	TNT Manufacturing Valley		VAAP-32
New Landfill/Burning Ground	SWMU #9	Burning Ground/New Landfill		VAAP-15
Salvage Yard		Salvage Yard	AOC-2	
		Eastern Magazine Area		VAAP-06
		Pesticide Storage		VAAP-31
		Industrial Surface Water Pollution Control Facility		VAAP-34

Abbreviations

AOC area of concern

DSERTS Defense Site Environmental Restoration Tracking System

SWMU solid waste management unit

TNT trinititrotoluene, an explosive manufactured at Volunteer Army Ammunition Plant

VAAP Volunteer Army Ammunition Plan

APPENDIX F

LIST OF KEY CONTACTS

APPENDIX F
LIST OF KEY CONTACTS

Federally-Elected Officials

Senator Bill Frist
U.S. Senate
416 Russell Senate Office Building
Washington, DC 20510

Senator Fred Thompson
U.S. Senate
511 Dirksen Senate Office Building
Washington, DC 20510

Senator Bill Frist
U.S. Senate
735 Broad St., Suite 701
Chattanooga, Tennessee 37402

Representative Zack Wamp
U.S. House of Representatives
900 Georgia Avenue #126
Chattanooga, Tennessee 37402-2282

Federal Non-Elected Officials

U.S. Army

Mr. Edward Engbert
U.S. Army Regional Environmental Coordinator
101 Marietta Street, Suite 3120
Atlanta, Georgia 30303-2716

Commander
Holston Army Ammunition Plant
Attn: SOSHS-EC (Ms. Pam Wigle)
4509 West Stone Drive
Kingsport, Tennessee 37660-9982

Mr. Doug Webb
Corps Of Engineers
Attn: CESAM EN GH
P.O. Box 2288
Mobile, Alabama 36628-0001

Bobby Holiway, Commander's Representative
Volunteer Army Ammunition Plant
P.O. Box 22607
Chattanooga, Tennessee 73422-2607

U.S. Environmental Protection Agency

Ms. Liz Wilde
Dept. of Defense Remedial Section
Federal Facilities Branch
Waste Management Division
U.S. Environmental Protection Agency,
Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303-3104

Ms. Tiki Whitfield
U.S. Environmental Protection Agency,
Region 4
4WD FFB
61 Forsyth Street
Atlanta, Georgia 30303

Mr. Doyle Brittain, Sr.
U.S. Environmental Protection Agency,
Region 4
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, Georgia 30303

Andrew T. Porter, Chemist
U.S. Environmental Protection Agency,
Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303-8960

General Services Administration

General Services Administration
Property Disposal
Attn: Ms. Lori Dennis
James O. Eastland U.S. Courthouse
Box 22, 245 E. Capitol Street
Jackson, Mississippi 39201

Agency for Toxic Substances and Disease Registry

Dr. Sue Neurath
Agency for Toxic Substances and Disease Registry
MS E-56
1600 Clifton Road
Atlanta, GA 30333

National Park Service

Mr. William Huie
National Park Service - SE Field Area
Federal Center - 1924 Building
Atlanta, Georgia 30303

State Elected Officials

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600 Charlotte Avenue
Nashville, Tennessee 3743-0001

Representative Bobby Wood
District 26, Tennessee House
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Harrison, Tennessee 37416

Representative Bobby Wood
District 26, Tennessee House
104 War Memorial Building
Nashville, Tennessee 37243-0126

Representative Jim Vincent
District 31, Tennessee House
2610 Stonesage Road
Soddy Daisy, Tennessee 37379

Representative Jim Vincent
District 31, Tennessee House
207 War Memorial Building
Nashville, Tennessee 37243-0131

Senator Ward Crutchfield
District 10, Tennessee Senate
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Chattanooga, Tennessee 37402

Senator Ward Crutchfield
District 10, Tennessee Senate
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Nashville, Tennessee 37234-0210

Senator David Fowler
District 11, Tennessee Senate
P.O. Box 1749
Chattanooga, Tennessee 37401

Senator David Fowler
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304 War Memorial Building
Nashville, Tennessee 37243-0211

State Non-Elected Officials

Tennessee Department of Environment and Conservation

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TDEC Division of Superfund
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Chattanooga Tennessee 37402

Mr. David Harbin
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401 Church Street
Nashville, Tennessee 37243

Dr. Ruth Chen, Toxicologist
Tennessee Department of Environment
and Conservation
5th Floor, L & C Towers Annex
401 Church St.
Nashville, Tennessee 37243-1535

Mr. Clint Willis
Director, Federal Programs
4th Floor, L&C Towers Annex
401 Church Street
Nashville, Tennessee 37243

Tennessee Department of Health

Tennessee Department of Health
4th Floor, Cordell Hull Bldg.
425 Fifth Avenue North
Nashville, Tennessee 37247-5281

City of Chattanooga Elected Officials

Honorable Bob Corker
Mayor of Chattanooga
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Chattanooga, Tennessee 37402

Councilman John P. Franklin, Jr.
Chattanooga City Council, District 5
1000 Lindsay Street, Room 111
Chattanooga, Tennessee 37402

Councilman Jack Benson
Chattanooga City Council, District 4
1000 Lindsay Street, Room 111
Chattanooga, Tennessee 37402

City of Chattanooga and Hamilton County Non-Elected Officials

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1250 Market Street, Suite 2100
Chattanooga, Tennessee 37402

Mr. Steve Leach
Chattanooga-Hamilton County Regional
Planning Agency
200 City Hall Annex
Chattanooga, Tennessee 37902

Jim Parks
Hamilton County Environmental Health
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Chattanooga, Tennessee 37403

Mr. Errol Reksten
Chattanooga-Hamilton County Air Pollution
Control Bureau
Development Resource Center
1250 Market St., Suite 3020
Chattanooga, Tennessee 37402-4443

Mr. Bob Colby
Chattanooga-Hamilton County Air Pollution
Control Bureau
Development Resource Center
1250 Market St., Suite 3020
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Ms. Becky Browder
Hamilton County Real Property Manager
123 East 7th Street
Chattanooga, Tennessee 37402

Hamilton County Elected Officials

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County Executive
208 County Court House
Chattanooga, Tennessee 37402

Commissioner JoAnne Favors
Hamilton County Commission, District 5
105 Courthouse
Chattanooga, Tennessee 37402

Commissioner Harold Coker
Hamilton County Commission, District 7
105 County Court House
Chattanooga, Tennessee 37402

Commissioner Bill Hullander
Hamilton County Commission, District 9
105 Courthouse
Chattanooga, Tennessee 37402

News Media

Newspaper

News Department
Chattanooga Times-Free Press
400 East 11th Street
Chattanooga, Tennessee 37403

Associated Press Editor
400 East 11th Street
Chattanooga, Tennessee

Radio

News Department
WDOD AM/FM Radio
P.O. Box 1449
Chattanooga, Tennessee 37401-1449

News Department
WSKZ Radio KZ-106
821 Pineville Road
Chattanooga, Tennessee 37405

News Department
WMBW Radio
1920 East 24th Street Place
Chattanooga, Tennessee 37404

News Department
WUST US-101 Radio
7413 Old Lee Highway
Chattanooga, Tennessee 37421

News Department
WDEF 92.3 Radio
2615 Broad Street
Chattanooga, Tennessee 37408

News Department
WGOW Radio 102.3
821 Pineville Road
Chattanooga, Tennessee 37405

News Department
WJIT-FM
1305 Carter Street
Chattanooga, Tennessee 37402

WNOO-FM
1108 Hendricks Street
Chattanooga, Tennessee 37046

Television

News Department
WRCB TV Channel 3
900 Whitehall Road
Chattanooga, Tennessee 37405

News Department
WTVC TV Channel 9
P.O. Box 60028
Chattanooga, Tennessee 37406

News Department
WDEF TV Channel 12
3300 Broad Street
Chattanooga, Tennessee 37408

News Department
SDSI TV Channel 61
1101 East Main Street
Chattanooga, Tennessee 37408

Website

Mr. John Thilson
Chattanooga.com
100 Cherokee Boulevard, Suite 104
Chattanooga, Tennessee 37408

Interested Citizens and Groups

Director
Audubon Acres
900 North Sanctuary Road
Chattanooga, Tennessee 37421

Chairman
Department of Biology/Environmental Science
University of Chattanooga
615 McCallie Avenue
Chattanooga, Tennessee 37403

Chairman
Department of Engineering
University of Chattanooga
615 McCallie Avenue
Chattanooga, Tennessee 37403

League Of Women Voters
6903 Hickory View Lane
Chattanooga, Tennessee 37421

Director
Chattanooga Nature Center
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Mr. Steve Hiatt
Business Development Manager
Chattanooga Area Chamber of Commerce
1001 Market Street
Chattanooga, Tennessee 37402

Co-Chair
South Chickamauga Creek Greenway Alliance
3701 Skylark Trail
Chattanooga, Tennessee 37416

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Lakeside Academy of Math, Science & Technology
4850 Jersey Pike
Chattanooga, Tennessee 37416

Ms. Susan Hixson, Principal
Bess T. Shepherd Elementary Schoool
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Chattanooga, Tennessee 37421

Mr. William Shadwick, Principal
Harrison Elementary School
5637 Highway 58 North
Harrison, Tennessee 37341

Mrs. Stacy Stewart, Principal
Brown Middle School
5716 Highway 58
Harrison, Tennessee 37341

Mrs. Pam Dantzler, Principal
Tyner Middle Academy
6837 Tyner Road
Chattanooga, Tennessee 37421

Mr. David Cowan, Principal
Chattanooga Central High School
5728 Highway 58
Harrison, Tennessee 37341

Mr. Andy Anderson, Principal
Harrison Bay Technical Center
9050 Career Lane
Ooltewah, Tennessee 37363

Mr. Stephen L. Ball, Principal
Tyner Academy
6836 Tyner Road
Chattanooga, Tennessee 37421

Mr. Gary James, Principal
Washington Alternative School
7821 Hancock Road
Chattanooga, Tennessee 37407

APPENDIX G

INTERVIEW QUESTIONNAIRE AND RESPONSES

APPENDIX G
Interview Questionnaire and Responses for the Volunteer Army Ammunition Plant (VAAP) Public Participation Plan

1. What do you know of the history of Volunteer Army Ammunition Plant?

Most responding knew something about past operations at VAAP. Eight had a general knowledge of activities; another seven knew a great deal, being able to cite dates of different types of operations and activities. Only one person said she knew nothing; another said VAAP had been a good employer.

2. What awareness do you have of what is going on now at Volunteer Army Ammunition Plant?

Almost half knew that some property had been turned over to the city and county. Five knew that some remediation work has been and is being conducted there. One said that no manufacturing is currently being done there. Another mentioned that Xavier Chemical and Chattanooga Railcar Repair are on site.

3. Do you have any concerns about past or present work done at Volunteer Army Ammunition Plant?

Five said they had no concerns. Three said they trusted that the cleanup would be done correctly, with one saying that the facility has been "well kept." Six mentioned water quality (both groundwater and streams), and the following bodies of water were mentioned specifically: Poe's Branch and Fryar's Branch.

Four questioned who is "in charge" of the cleanup, with one saying that the U.S. Environmental Protection Agency's (EPA) administrative order is "going backwards," causing a delay in the release of an additional 200 acres located near the Board of Education and adding $8 million and two years to the cleanup process. Another said that EPA is being an "obstructionist" in a speedy cleanup. Another accused the different agencies of bantering over control of the cleanup. One said that the Army has had to change its thinking about releasing property, but it had "come around" after a time.

Two said that they believe that in the past no one, including the Army, cared about the environment and how their activities affected it. The following concerns received one mention each:

- The cleanup needs to be in regulatory compliance.
- The wetlands on the property need to be protected.
- Contaminated soil.
- Past releases to the air.
- What cleanup is being done is not being done where it is most needed.

One person who had lived near the facility said he developed asthma in the 1950s when the plant was operating and that it went away when he moved out of town. (He since has returned to Chattanooga.)

4. Have you had any contact with local, state, or federal agencies, including Army officials, concerning Volunteer Army Ammunition Plant?

Only one person said there had been no contact with any agency about VAAP. Six people said they had had contact with all agencies and officials involved, with one person saying that she had been involved in briefing Congressional and state delegations about VAAP. Three mentioned the Army, and one mentioned Bob Elmore specifically. Four had been in contact with the Tennessee Department of Environment and Conservation (TDEC), and three with someone in the city government. Two said that they had been in contact with the Army's site manager, and another two with EPA. One person had been in contact with the Agency for Toxic Substances and Disease Registry (ATSDR).

If yes, did they contact you or did you contact them? What was the nature of the contact and were you satisfied with their information?

Eight said they had contacted officials, and another three said an official or agency had contacted them. Those mentioning the nature of the information shared included: off-site well testing, sale of property, flooding on adjacent property, and water drainage from VAAP. In terms of satisfaction with information shared, 12 expressed satisfaction with the information, and another one only with information from the Regional Planning Agency and another only with information from TDEC.

Five said they were not happy with the information they received. One was frustrated because he believed the Army's goals were not the same as those in the community, yet another said the Army had been more proactive toward property transfer interests than other agencies. Another said she found the Army did not want to provide information at all and took too long to release information once the Army decided to provide it.

5. Are you or have you been involved in any activities at Volunteer Army Ammunition Plant?

Eleven said they had been involved in activities at VAAP; only three said they had not. One said that he would like to hunt on the property but so far, had been unsuccessful in the Tennessee Wildlife Resources Agency (TWRA) hunting lottery.

If yes, what are they?

Seven said they had attended a Restoration Advisory Board (RAB) meeting or were a RAB member. Five had been on tours of the 940-acre site--now called Enterprise South Industrial Park--with city, county, or contractor officials. Another three had toured the entire facility with an Army official. Two had participated in public meetings about developing the 940 acres sold to the city and county. Another two had attended a road rally held on the facility. One each had: had his well tested by the Army, reviewed VAAP documents, participated in Army Reserve activities, and attended a bicycle race there.

6. Are you aware of any environmental issues concerning other environmental sites or incidents in the area? If yes, what are they?

This question is asked to help place the Army's cleanup in context with other environmental activities occurring in the area. Sometimes sensitivity to environmental conditions at other sites or to incidences can color how the public may perceive what is going on at the cleanup being discussed.

Only one person could not think of other environmental issues or incidents. Six mentioned that Chattanooga, because of its heavy industrial past, has many brownfield sites around town.

Four mentioned surface water contamination, with specific mentions of Chattanooga and Chickamauga creeks. Three said that because of Chattanooga's 1968 ranking as the city having the worst air in the country, Chattanoogans are more sensitive to environmental issues in general. Two persons mentioned non-point source pollution; another two, soil contamination from runoff from the site; and another two mentioned a coke plant Superfund site in downtown Chattanooga.

Only one person each mentioned the following issues or incidents:

- TVA has stopped taking care of its hydroelectric plants.
- Loss of tree cover.
- Poor manufacturing practices by local companies in the past.
- Nearby City of Copper Hill contamination.
- Underground storage tanks still are being removed around town.

7. Are you aware that Volunteer Army Ammunition Plant is involved in environmental cleanup activities?

Thirteen people said they were aware of VAAP's environmental cleanup, with one saying he was aware of the completed cleanup of "hot spots" at the 940-acre Enterprise South Industrial Park site. One person said she had no awareness of activities.

If yes, what do you know about those activities?

Seven people said they did not know much about the activities, but three said they knew that contamination in the soil at the facility has been identified, and another two said that contamination in general has been characterized.

Two knew that the Army has sampled off-site residential wells, and another two said they think that the cleanup is taking too long and too much is being spent on studies rather than actual cleanup. Another two said they knew either "a lot" or "everything" about the cleanup activities, with one adding that the only limitation has been a slow down in the cleanup from lack of funding.

Finally, only one person each mentioned the following information about the cleanup:

- The Army is considering bioremediation of the groundwater.
- Some areas on the facility will never be cleaned up.
- The Army has committed a lot of money to the cleanup.

8. What is your understanding of how the environmental cleanup process works?

Three people said they either had no knowledge of the environmental cleanup process or they weren't sure about what they know. Five said the process is too slow, long, and tedious.

Four said the process includes an eventual assessment of and decision about cleanup alternatives. Three said the regulators must approve activities or work with the Army to develop plans. Another two equated the process with removing contaminated soil or underground storage tanks.

Only one person each mentioned the following parts of the process: monitoring, interim actions to stop contamination migration, and risk assessment of sites to rank them for possible harm to humans or the environment.

9. Do you have any concerns about the environmental cleanup activities at Volunteer Army Ammunition Plant? If yes, what are they?

Eight people said they had no concerns, with five of those saying that they think the cleanup will be done correctly. One of those added that the cleanup would be done correctly only if the community monitors the activities.

Another five said the disagreement they perceive over the issue of "who's in charge" of the cleanup is slowing it down. Another person said the pace of the cleanup is too slow, without attributing a reason for the slow pace.

Two said they do not know what is going on, and another two said the Army doesn't know what cleanup remedy to select because it does not know enough about the underground geology and water flow. Another two said that either too little advancement is being made in the cleanup in the TNT Manufacturing Valley site or cleanup is being conducted where it is least needed. Another two mentioned a concern about the groundwater in general.

Only one person each mentioned the following concerns:

- The Army is being too hasty in transferring property; the cleanup could be compromised from haste.
- The fact that contamination has migrated off site.
- Runoff to the Tennessee River.
- Buried barrels.
- Arsenic in the soil.
- Polychlorinated biphenyls (PCBs).

10. Do you know where information about environmental cleanup activities at Volunteer Army Ammunition Plant can be obtained?

Eight said they knew where to go for information about the cleanup; six said they did not.

If yes, where do you go or where would you go to get this information?

Six people mentioned Bob Elmore specifically. Four said they would contact TDEC, and two each said they would contact Steve Muffler, a long-time project manager for contractor, IT Corporation. Three said they would look at the public library. Two persons each mentioned the following resources: RAB meetings or an EPA or Army website.

Only one person each mentioned the following resources:

- County executive
- Regional Planning Agency
- Former employees
- Media
- Phone book
- Army
- County real property office
- Richard Twitchell, former employee and RAB member

11. What type of information do you feel you need or want on the cleanup activities at Volunteer Army Ammunition Plant?

Five said they want to know what is going on or planned for the site. Four wanted a definite schedule of activities, with three wanting the Army to assign priorities to activities and communicate those to the public.

- Five stressed that any information provided to the public needs to be concise, and another person added that she hates the Army's cleanup acronyms and jargon. Four wanted to know if site contamination would hurt them, and another wanted assurance that the soil and groundwater are clean.

Two said they want good data analysis or monitoring reports.

Only one person each mentioned wanting the following types of information:

- Assurance that cleaned up sites are useable, transferable.
- Whether the latest remediation techniques are being considered.
- A copy of the latest Installation Action Plan.
- Assurance that areas will be kept natural.
- Whether there are any changes in contamination levels at individual sites.
- Advance notification of information about to be released to the public.
- Air emissions associated with any cleanup activities.
- Newspaper clippings about cleanup activities.

12. What method/s and frequency of receiving information would you prefer?

Eight said they wanted to receive information through the media, with four specifying newspaper coverage of activities and only one naming TV coverage. One person said she would prefer any method, EXCEPT through the mass media.

Five each of those responding preferred receiving information by mail or e-mail. Four said they would like to be able to get information when they wanted it from a web site. One added that he would like to see closure notices specifically posted on a web site.

Two suggested the Army publish fact sheets or occasional update newsletters, with one stressing that the information should not be too technical. Another two thought the Army should host public meetings about activities.

One person each said the Army should send announcements of activities and events or participate in a public event, such as Earth Day, to draw attention to its cleanup program.

As to frequency, eight suggested the contact should be quarterly, and four recommended monthly contact. Three wanted information as it occurs or when decisions are made, and two wanted to receive information before it is released to the wider public. Only one thought contact should occur annually.

13. What is your main source for news?

Thirteen cited the newspaper as their main news source, followed by four who most watch TV coverage. Two named radio news, and one said e-mail was her main news source.

Do you trust this news source? If not, which source do you trust?

Nine said they trusted their main news source, while three said they did not. Another two trusted their news source with limits: one did not trust the local paper on its opinions, and one did not trust the *Free Press*--as opposed to the *Times*--on environmental reporting. Three people mentioned former *Chattanooga Times and Free Press* environmental reporter, Judy Walton, as being unbiased and getting information correct. One person said that any news source could be biased, especially since their reporters are not technical people. One person faulted the newspaper for not checking with TDEC on a particular story.

14. What newspaper do you read most frequently?

The *Chattanooga Times and Free Press* won hands down with 10 responses. No other newspapers were mentioned.

How often do you read the newspaper? (Daily, weekends, etc.)

This group makes Chattanoogans look like a newspaper-reading city. Twelve respondents said they read it daily.

15. Are you currently on the Volunteer Army Ammunition Plant environmental cleanup mailing list?

Seven said they were not on a mailing list, with three reporting that they had been in the past but were not now. Six said they were on a list, with one saying that he received most information from VAAP by e-mail.

If you are, what type of information do you receive in the mail?

Nine said they receive notices, and five reported receiving RAB meeting minutes.

If you are, is the information you receive helpful? Why or why not?

Four said information was helpful. One said it was not.

16. If you are not on the mailing list, would you like to be? If "yes," could we have your name, address, and phone number?

Three said they would like to be on the list; two said they would not. One wanted to be on a mailing list only if it were the only way to get information from VAAP.

What about an e-mail address?

Almost everyone who had one supplied an e-mail address if they were not already on a VAAP mailing list.

17. Would you like to be involved in future activities associated with the cleanup at Volunteer Army Ammunition Plant? If "yes," how?

Six said they would, with three saying they would like to participate in the RAB, one wanting to maintain his current level of involvement, and one wanted to be kept informed only, and another would be willing to attend public meetings. Three said they would not like to be involved.

18. Are you aware of the Restoration Advisory Board (RAB)?

Fourteen people said they knew about the RAB, and only two said they had not heard of it.

If yes, have you ever attended or are you interested in attending a meeting?

Seven said they had attended meetings, and another said she sent a representative from her organization to the meetings. Five said they have not attended a meeting.

If you've attended a meeting, are the RAB meetings--where information about environmental activities at Volunteer Army Ammunition Plant is shared--helpful and convenient for you? (Ask about location, time, frequency.)

Six of those reporting they had attended meetings said they thought the location, time, and frequency was good, with one adding she was glad they met in the evenings and another saying that meeting bimonthly was good for her.

Five said the meetings were helpful, with one citing being able to see large maps of the sites as helpful.

If not, why not? What would make these meetings better?

Five did not find the meetings were that helpful, saying that:

- They are too technical.
- They are not technical enough. (An engineer said this.)

- There is too much confusion or conflict over the different roles of the agencies involved.
- Schedules and funding are not clear.
- There is too much talk of cleanup *possibilities*, not actual cleanup going on.

Two thought that having a larger room for audience members or the public would be helpful; past meetings had some people leaving or sitting in cramped quarters for too long a period.

One person thought that most people do not understand the issues being discussed and that little could be done to bring them up to speed.

19. Do you know of any other groups or individuals you think we should contact for interviews concerning these activities at Volunteer Army Ammunition Plant? (Get name, address, and phone number, if possible.)

A variety of individuals and groups were mentioned, some of whom were contacted for interviews. These included: homeowners or people whose wells were tested, residential land developers, RAB members, school principals, TWRA, the local health department, ATSDR, commercial bank loan officers, land preservationists, people who have attended past RAB meetings, the Greenway Alliance, General Services Administration, county real property office.

20. Is there anything else about Volunteer Army Ammunition Plant that you would like to comment on?

Six offered no further comment. The following comments were received from eight people:

"I'd like to see historic buildings preserved. We should preserve the history of the site."

"This is a well-contained site. The Army is working to make sure that contamination is not allowed to spill out into the community."

"This property has a lot of potential--whether it becomes an industrial or recreational site. It's a nice place."

"The Army should set up consistent communication with the community."

"Everything's on schedule, moving along."

"This facility is the single greatest economic development opportunity we've had in generations. It's the state's premiere and biggest development site."

"A land use plan for the entire facility grew out of a GSA (General Services Administration) public meeting held in the late 1990s."

"This is an important asset to local government. Some of the Feds understand how important this is to us. We got 940 acres in record time. It's very successful. I wish we had the same relationship [with the Army] again."

Elected/Agency Officials Addendum

Individuals, who because of their jobs or elected positions may be perceived by the public as an information resource, were asked additional questions to determine if they could share information about what people want to know about VAAP.

1. What questions or concerns have you received from the public concerning Volunteer Army Ammunition Plant?

Only one person asked had received no questions from the public about VAAP. One person had received calls from people living near the site whose wells were tested. One person for a short period of time had received many calls about the sulfuric acid plant that was once scheduled for a restart. (The plant was not reopened, however.) Five reported receiving calls about the availability of lease or purchase of land in the 940-acre Enterprise South Industrial Park.

Have these concerns been about environmental cleanup actions at Volunteer?

Three said the calls were not about the environmental cleanup at VAAP, and another three said they had been--but only for the 940-acre Enterprise South Industrial Park portion of the site. One call was about the pace of the cleanup in the TNT Manufacturing Valley site, and another call was to discuss why the Army is waiting to release known "clean areas" to the public.

2. What is your perception of the public's opinion toward Volunteer Army Ammunition Plant or the Army and its decisions for conducting environmental cleanup actions?

Two said they thought that Chattanoogans think the 940-acre Enterprise South Industrial Park is a good investment for the community, and another two said they thought that most people are not even aware of the facility. One person each said: the community has faith in the Army to conduct the appropriate cleanup measures, and the public is excited by the opportunities presented by the Enterprise South Industrial Park portion. One said that he thinks the Army "sowed seeds of deception" in people's minds during past operating periods when the metal door frames at nearby schools deteriorated and women's stockings "melted" on their legs from the air emissions.

3. Do you feel that public concerns are addressed by the Army in the cleanup process?

One person did not know that the Army was involved in any way in a cleanup at VAAP.

The following comments got one mention each:

- Concerns today are being addressed; they were not always in the past.
- Concerns about issues at the Enterprise South Industrial Park only are being addressed.
- No one really cares, unless the activities impact their own property.
- The RAB and local Army representatives have tried to address concerns, but under pressure from those "higher up," they often cannot.

If not, how might they be?

- Speed up the cleanup.
- Open a dialogue with the public through the local newspaper, the *Chattanooga Times and Free Press*. Send news releases about activities on a continuous schedule.
- Hold public hearings.
- The Army should inform elected and regulatory officials about developments before they are announced to the public so that they can be prepared to answer questions when people call.
- Keep people informed.
- Tell people what the Army is going to do about the contamination.
- Alleviate the concerns of potential buyers that the Army will not want the property back some day.

4. What types of people have you had contact with concerning Volunteer Army Ammunition Plant? (Residents, other elected officials, agency representatives, etc.)

No one said they had regular or consistent contact with residents about VAAP, but others have had contact with the Army's Commander's Representative, Bob Elmore (2 mentions), and Lori Dennis with GSA.

5. If you need information about Volunteer Army Ammunition Plant, whom do you contact?

The Commander's Representative, Mike Compton in the Mayor's Office, Steve Muffler (long-time project manager with contractor IT Corporation), and TDEC.

6. How do you keep the public informed and address their concerns about Volunteer Army Ammunition Plant?

One person had given talks to community groups about the 940-acre Enterprise South Industrial Park portion. One referred people to the information repository at the public library.

RAB Members Addendum

1. How long have you been involved in the RAB?

Two had been members since its inception; one has been a member less than a year.

2. Do you intend to continue your involvement? If yes, why?

All three said they intend to continue their involvement with the RAB, with one mentioning that he wants to make things better for the future.

3. What achievements do you believe the RAB can claim?

Two said they think that more communication with the community has come out of the RAB's involvement at VAAP, and one said that he has worked hard to encourage other community members to become involved. One person did not think the RAB could claim any "achievements."

4. How can the RAB be improved? What can be done to make the RAB more effective?

One did not think the RAB needs improvement, believing that it's effective.

One said the group needs to meet in a larger room to allow more people to attend comfortably. Another said that neighborhood groups should be encouraged to participate, and another thinks that younger members should be sought for the group, adding that almost all RAB members are over 50 years of age. One said he was not sure that the Army is really interested in receiving information from or fostering two-way communication with the RAB.

5. Are there any other thoughts you would like to share specifically related to the RAB or the Army's involvement with the RAB?

One said she believes that the RAB makes people more aware of the activities at VAAP, and another said he accepts the responsibility to help educate community members about what potential exposures they may have had from operations or cleanup activities.

APPENDIX H

LOCATION OF POTENTIAL MEETING SITES

Appendix H

Location of Potential Meeting Sites for Volunteer Army Ammunition Plant, Chattanooga, Tennessee

Volunteer Army Ammunition Plant

6703 Bonny Oaks Drive
Building 232
Chattanooga, TN 37421

Contact: Mr. Robert Elmore
Phone: (423) 893-6803
Fax: (423) 893-9726
E-mail: Relmore@vol.com

Room comfortably seats 25-30 people.
Handicapped accessible.

Hamilton County Department of Education

6703 Bonny Oaks Drive
Building 200-1
Chattanooga, TN 37411

Contact: Ms. Gayle Patterson
Phone: (423) 209-8496

Board table seats 9-10 people. Table has microphones available.
Room can seat up to 100 people theater-style.
Handicapped accessible.
Audio-visual equipment is available with advance notice.

Charge: There is no charge when the room is available during normal business hours. For meetings after hours, there is a nominal charge for accessibility and cleanup.